



**Environmental Assessment for the
Construction/Operation of Firing Ranges and Other
Training Facilities
Piñon Canyon Maneuver Site, CO**



**Headquarters 7th Infantry Division & Fort Carson
Directorate of Environmental Compliance & Management**



FINDING OF NO SIGNIFICANT IMPACT

CONSTRUCTION/OPERATION OF FIRING RANGES AND OTHER TRAINING FACILITIES, PINON CANYON TRAINING SITE, COLORADO

7th INFANTRY DIVISION AND FORT CARSON, COLORADO

1. **Description of Action.** The 7th Infantry Division and Fort Carson proposes to construct/operate four static, live-fire, small arms ranges, a Military Operations in Urban Terrain facility, a shoot house, and a Soldiers' Support Center at the Pinon Canyon Maneuver Site (PCMS) to support its expanded mission requirements.

Facilities would be constructed between 2004 and 2009. All facilities would be within or adjacent to the PCMS cantonment area. Small arms ranges would fire into the interior of PCMS (from west to east), using non-lead ("green") ammunition, when available.

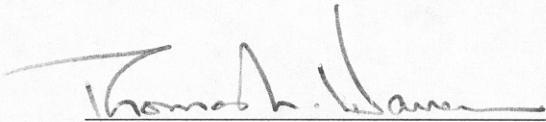
2. **Anticipated Environmental Effects.** There would be slightly negative effects of the construction on vegetation and soils on construction sites. Areas downrange of the firing ranges would be off-limits to recreation and other uses when the ranges are firing. Airspace above the ranges and their firing fans would be closed during firing events. Noise impacts off the installation would be minor. After construction, there would be virtually no effects on air quality. No adverse impact is expected to occur to any federal-listed threatened or endangered plant or animal species.

No significant adverse impacts are anticipated for noise, air quality, geology, soils, water resources, biological resources, cultural resources, children safety, or environmental justice. There would be positive socio-economic impacts, primarily from construction expenditures.

3. **Conclusions.** Based on a review of the information contained in the environmental assessment for this project, it is concluded that construction/operation of static, live-fire, small arms ranges, a Military Operations in Urban Terrain facility, shoot house, and a Soldiers' Support Center at PCMS is not a major federal action that would significantly affect the quality of the environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the preparation of an Environmental Impact Statement for this proposed action is not required.
4. **Point of Contact.** Requests for further information or submittal of public comments may be made for 30 days after first publication date to:

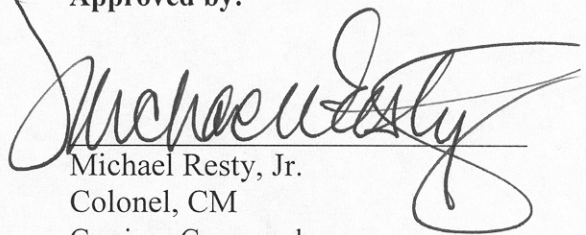
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ENVIRONMENTAL ASSESSMENT
for the
Construction/Operation of Firing Ranges and Other Training Facilities
Pinon Canyon Maneuver Site, Colorado

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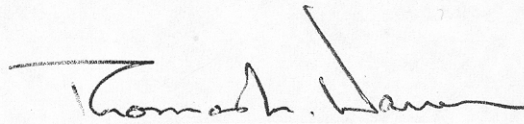
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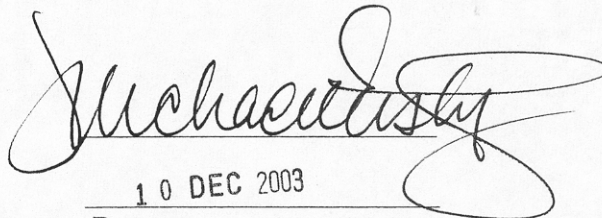


8 DEC 2003

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Errata Sheet: Environmental Assessment for the Construction/Operation of Firing Ranges and Other Training Facilities, Piñon Canyon Maneuver Site, CO, January 2004

Section 4.1.2 Environmental Consequences, of the EA states:

"Airspace over the proposed firing ranges (Fig. 2.2.1) would be closed during those periods when the ranges are active. The 7th ID and Fort Carson would obtain a Controlled Firing Area designation through the Federal Aviation Administration to accomplish this action, via FAA Order 7400.2E, *Procedures for Handling Airspace Matters*. Airspace would not be changed from current designations during periods when the ranges are not being used. "

This section should read:

"Firing would cease whenever an aircraft is approaching the safety fan of any of the proposed small arms ranges (Fig. 2.2.1) when they are active. The 7th ID and Fort Carson would obtain approval for a Controlled Firing Area through the Federal Aviation Administration to accomplish this action, via FAA Order 7400.2E, *Procedures for Handling Airspace Matters*. Airspace would not be changed from current designations. The small arms ranges would have Air Guards posted on them during firing to halt firing if an aircraft is approaching."

In Fort Carson's response to a letter from Jerry A. Wenger during the public comment period, we stated that "The area will be designated a Controlled Firing Area (CFA). The CFA will be limited to 12,500 ft. MSL only." This should read "10,000 ft. MSL only."

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ENVIRONMENTAL ASSESSMENT for the Construction/Operation of Firing Ranges and Other Training Facilities Pinon Canyon Maneuver Site, Colorado

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ENVIRONMENTAL ASSESSMENT
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Facilities
Piñon Canyon Maneuver Site, Colorado

1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The 7th Infantry Division (ID) and Fort Carson (hereinafter called Fort Carson) is proposing to construct/operate static, live-fire, small arms ranges, a Military Operations in Urban Terrain (MOUT) facility, shoot house, and a Soldiers' Support Center at the Piñon Canyon Maneuver Site (PCMS), located in Las Animas County, near Trinidad, Colorado to maintain its capability to conduct its military mission to meet evolving Army training standards. This section presents the purpose and need for the Proposed Action; defines the scope of the environmental analysis and issues to be considered; identifies decisions to be made; and identifies other relevant documents and actions.

The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in their decision-making process. The President's Council on Environmental Quality issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental analysis. Environmental analysis of Army actions is accomplished through the adherence to the procedures set forth in Council on Environmental Quality regulations (40 CFR Sections 1500-1508) and 32 CFR Section 651 (*Army Regulation 200-2, Environmental Analysis of Army Actions, Federal Register Vol. 67, No. 61, March 29, 2002*).

Army Regulation 200-2 sets forth policy, responsibilities, and procedures for integrating environmental considerations into Army planning and decision-making. Army Regulation 200-1, *Environmental Protection and Enhancement*, February 21, 1997, provides strategies for pollution prevention, conservation and preservation of natural and cultural resources, compliance with environmental laws, and restoration of previously contaminated sites. These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation that is designed to ensure deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. Continuing resource stewardship in accordance with the spirit of the existing PCMS Environmental Impact Statement (*Final Environmental Impact Statement for Acquisition of Training Land in Huerfano, Las Animas and Pueblo Counties, Colorado* (U.S. Department of the Army 1980)) will greatly enhance the long-range sustainability of these lands for future training and Army missions.

Proposed ranges and facilities are mission-essential projects for the existing mission and current training units.

1.2 Purpose and Need for Action

In short, the purpose for the proposed action is to expand Fort Carson's training capability to support its expanded mission requirements.

Since the opening of the PCMS in 1983, Fort Carson's weapons ranges and training areas have been used for individual and crew-served weapons qualification and training and for small-unit training. PCMS has been used mainly for large-unit training and exercises.

In the past 20 years since PCMS began operations, the historic trend has continued. However, the distance that weapons systems can fire has increased, as have the mobility and area of operations of various military units. The result has been that, even with no increase in the number of units for which Fort Carson has training responsibility or changes in missions, the demand for training space would have increased.

However, Fort Carson missions and the numbers of units and personnel for which it has training responsibility have increased dramatically, especially in recent years.

Although the mix of units assigned to Fort Carson has changed over time, the overall numbers have remained relatively constant. At present, the installation houses four main military units:

- the 3rd Armored Cavalry Regiment, which is essentially a self-contained, heavy combat unit of about 5,200 soldiers, with both ground and air forces;
- the 3rd Brigade Combat Team, which is a mechanized infantry brigade of over 3,000 soldiers, augmented with a number of support units to allow it to operate independently from the main part of its parent organization, the 4th Infantry Division at Fort Hood, Texas;
- the 43rd Area Support Group, whose integral units can provide a variety of support services including a combat support hospital, combat engineer services, transportation, maintenance, and military police; and
- the 10th Special Forces Group (Airborne) deploys special forces troops mainly to eastern Europe and the Middle East, utilizing the wide variety of skills required of such troops, such as language capability, parachuting, scuba diving, skiing, and so on, in addition to highly refined basic combat capabilities.

During a "normal" year, approximately 10,000 soldiers, 650 tracked vehicles, and 800 wheeled vehicles from these assigned units conduct training at PCMS.

In addition to assigned units, Fort Carson provides training support assistance and training evaluation oversight to 104 Reserve Component units annually. Much of this training must be conducted on Fort Carson, and it generally occurs mainly during summer, forcing assigned units to rely on PCMS for training during this time.

In June 1999 Fort Carson became home to the 7th Infantry Division, which is composed primarily of three Reserve Component infantry brigades, one each from Oregon, Arkansas, and Oklahoma. In "normal times," these brigades of over 3,000 soldiers each are required to perform two-week Validation Annual Training in preparation for deploying to Combat Training Centers in California or Louisiana. Although these brigades have usually conducted validation training at their home stations, the trend is to move that training to PCMS to allow better oversight by the Division headquarters at Fort Carson to afford better training support and ensure consistent training standards.

In July 2001 the 3rd Brigade Combat Team of the 4th Infantry Division became part of the Army's Division Ready Brigade Cycle, under which it is periodically put on alert to be able to deploy on short notice for real world missions. Training requirements for this unit increase as it nears and is in its alert cycle.

Finally, world events have dramatically increased and changed both present and anticipated demands on PCMS. Since September 11, 2001, Fort Carson has mobilized over 4,000 Reserve Component soldiers. This mobilization includes ensuring that they are trained, equipped, and supplied for deployment around the world. Under various possibilities, such as a major conflict, that number could rise to 15,000. Depending on timing of deployments, these mobilizing soldiers could be competing with some or all of the units assigned to Fort Carson for training resources.

This background information reflects that the firing ranges, the Military Operations in Urban Terrain (MOUT) site, and the Shoot House at PCMS are needed to help relieve the overload on facilities at Fort Carson itself. Additionally, these new facilities and operations, plus the Soldiers' Support Center, would allow much needed capability to deploy units directly from training at PCMS to real world missions.

Currently, during a normal unit deployment to PCMS of 30 to 45 days, a significant number of a unit's soldiers' firing qualifications will expire because of the absence of live fire ranges at PCMS. Thus, a unit cannot deploy directly from PCMS to a real world mission 100 percent combat ready. Instead, it must return to Fort Carson to renew these qualifications by firing on ranges there, competing for range time with other units. This effort can delay a unit's real world deployment by a critical matter of weeks. Adding the ranges at PCMS will avoid this problem; the weapons qualification training can be integrated into the schedule for maneuver training at PCMS.

Similarly, the MOUT site and Shoot House facilities are both necessary to prepare units for the kinds of areas in which current and projected real world operations are occurring or are likely to occur – built-up urban areas, and training at these sites can also be integrated into traditional training at PCMS.

1.3 Scope of Environmental Analysis

This Environmental Assessment is a supplement to the original PCMS acquisition Environmental Impact Statement (U.S. Department of the Army 1980). As such, it analyzes effects of the construction and operation of facilities at PCMS in support of the current Fort Carson/PCMS mission and training requirements. This Environmental Assessment addresses only specified proposed modifications. Unless otherwise identified within this Environmental Assessment, all previous resource management operations, use limitations, and organizational responsibilities remain as currently implemented,

This Environmental Assessment considers direct, indirect, and cumulative effects of the Proposed Action and alternatives, including the No Action Alternative. It was prepared in accordance with the National Environmental Policy Act of 1969 (42 USC 4321 *et seq.*), Council on Environmental Quality Regulations (40 CFR Parts 1500-1508), and Army Regulation 200-2, *Effects of Army Actions* (32 CFR Part 651). A specific requirement for this environmental assessment is an appraisal of effects of the proposed PCMS construction and operation of static small arms firing ranges, a MOUT site, a Shoot House, a Soldier Support Center, including a determination of whether or not a Finding of No Significant Impact is appropriate or whether a Notice of Intent to prepare an Environmental Impact Statement is required.

Some facilities may not be built to full Army standards initially, due to a lack of full funding. However, this environmental analysis addresses fully standard facilities, assuming that funding to achieve that goal will be obtained in the future. Thus, as these facilities are upgraded to full standards, additional NEPA analyses would not be required unless effects are different than described in this Environmental Assessment. The Modified Record Fire M-16 Range would be constructed to standard via Military Construction Army project (Project number 58128).

1.3.1 Scoping and Issues Analysis

Scoping is “an early and open process for determining the scope of issues to be addressed and for identifying significant issues related to the proposed action” (40 CFR 1501.7). These issues are used to develop alternative actions, including mitigation measures, and evaluate environmental consequences of proposed actions. A Fort Carson interdisciplinary team, primarily personnel identified in Section 6, *Persons Contacted-Fort Carson*, has discussed issues and concerns regarding these projects. Internal and external review of this environmental assessment, including making it available to the general public, will complete scoping.

1.3.2 Issues Not Addressed or Not Considered to be Potentially Significant

Initial scoping resulted in the elimination of some potential issues. Brief discussions of the rationale for these decisions are below.

Environmental Health and Safety Risks for Children

Executive Order No. 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, (62 Federal Regulation No. 78) was issued in April 1997. This Executive Order directs each federal agency to “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks”. Sensitive areas for exposure to children are schools and family housing areas. Environmental health and safety risks are attributable to products that a child might come in contact with or ingest as well as safety around construction areas and areas of buildings that pose safety hazards. Proposed projects are within the boundaries of PCMS in a very rural area. There is no family housing on PCMS. There are no schools (closest is 18 miles south) or other centers of child activity in the area. Construction and operation of the ranges, MOUT facility, shoot house, and Soldiers’ Support Center would comply with federal safety standards. Neither the Proposed Action nor its alternatives would have significant or disproportionate adverse effects on children or pose health or safety risks.

Geology and Topography

Neither the Proposed Action nor its alternatives would have any measurable effects on geologic resources or topography.

1.4 Decisions to Be Made

The decision to be made is whether to implement the Proposed Action, modify the Proposed Action, or select an alternative action, including the No Action Alternative. The Commander, 7ID and Fort Carson will make this decision.

1.5 Public and Agency Scoping and Comments Received

Public meetings were held in Trinidad, CO and La Junta, CO on November 17 and 18, respectively to obtain public input into the Proposed Action. Appropriate local, state, and federal agencies (see Chapter 7, *External Agency Coordination*) were provided drafts of this Environmental Assessment for their input. Appendix D has comments received from scoping and external review of this environmental assessment. These comments were used to improve the environmental assessment.

2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action (construction and operation of firing ranges and other training facilities), alternatives considered in this assessment, and alternatives that were eliminated from detailed consideration.

2.1 General Information

2.1.1 Location and Surrounding Land Uses

The PCMS, occupying 235,896 acres, is located approximately 150 miles southeast of Fort Carson and is totally located in Las Animas County, Colorado (Figure 2.1.1a). The PCMS measures about 31 miles east to west and about 21 miles north to south. The 1,670-acre cantonment area is located at the west central edge of PCMS, adjacent to Colorado Highway 350. PCMS is bordered on the north by the Comanche National Grassland and private interests; on the east by the Purgatoire River and U.S. Forest Service (grassland); on the south by County Road 56.0; and on the west by State Highway 350 and private property (Figure 2.1.1b). Land use adjacent to the PCMS is primarily used for livestock grazing, agriculture, and recreation.

2.1.2 Population

A few civilian employees are permanently assigned to PCMS. The surrounding area is sparsely populated; the population of Las Animas County was estimated to be 16,119 in 1999¹.

2.1.3 Climate

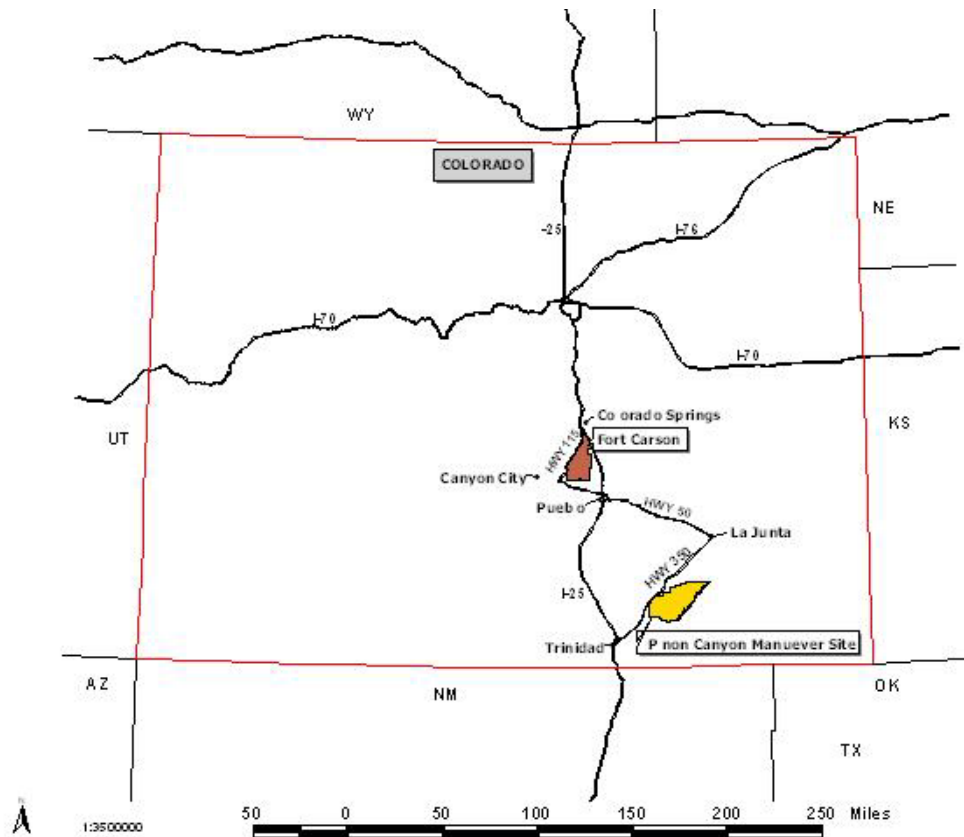
The climate in the PCMS area is classified as dry continental with average annual precipitation of approximately 13.5 inches, fluctuating widely from year to year and between areas of the parcel (U.S. Department of Army 1980, below Table 2.1). Precipitation at the PCMS primarily results from either frontal storms or convective storms. Frontal storms can occur throughout the year and have varying strength and frequency; the largest quantities of precipitation are associated with periods of moist airflow from the Gulf of Mexico. Convective storms occur frequently during July through September (Von Guerard *et al.* 1993). Monthly weather parameters collected by the U.S. Weather Service (www.weather.com) for Trinidad are shown in Table 2.1.

Table 2.1 Summary of Trinidad, CO Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. High	46°F	49°F	56°F	65°F	73°F	84°F	88°F	86°F	78°F	69°F	56°F	47°F
Avg. Low	16°F	19°F	25°F	34°F	43°F	53°F	59°F	57°F	49°F	37°F	26°F	17°F
Mean	31°F	35°F	41°F	50°F	59°F	69°F	74°F	72°F	64°F	54°F	41°F	33°F
Avg. Precip.	0.4 in	0.5 in	0.9 in	0.9 in	1.7 in	1.6 in	2.2 in	2.0 in	1.2 in	0.8 in	0.7 in	0.6 in
Record High	80°F 1997	82°F 1979	85°F 1971	91°F 1989	97°F 1996	103°F 1994	103°F 1973	100°F 1980	100°F 1995	89°F 1991	81°F 1980	81°F 1980
Record Low	-32°F 1963	-24°F 1982	-10°F 1965	3°F 1997	22°F 1991	35°F 1976	43°F 1952	43°F 1972	23°F 1984	1°F 1993	-17°F 1976	-19°F 1990

Figure 2.1.1a Location of Fort Carson Military Reservation and Piñon Canyon Maneuver Site

¹ <http://www.dlg.oem2.state.co.us/demog/estimate.htm>



2.2 Description of Proposed Action – Construction of Firing Ranges and Other Training Facilities

2.2.1 Firing Ranges

Proposed static, live-fire ranges would be just south of the cantonment area (Figure 2.2.1), between Main Supply Route 2 and Dillingham Ridge. Ranges would be static, *i.e.*, weapons would be fired from fixed firing lines or firing positions; maneuver and fire would not occur. Weapons fired on these ranges (*e.g.*, M249 Squad Assault Weapon, .50 caliber machine gun, M24 sniper rifle, M240B machine gun, M9 pistol, M16 rifle, M4 rifle, M203 grenade launcher) would use non-dudding, small arms ammunition (allowing downrange to be used for military maneuver [the current land use] when ranges are not being used). Green ammunition (projectile has no lead) would be used as the ammunition of choice on PCMS, whenever it is available². It is estimated that the following numbers of rounds of small arms ammunition would be fired annually if the ranges were to be fully utilized by three Light Infantry National Guard Brigades, one heavy brigade (3rd Brigade Combat Team), and the 3rd Armored Cavalry Regiment³.

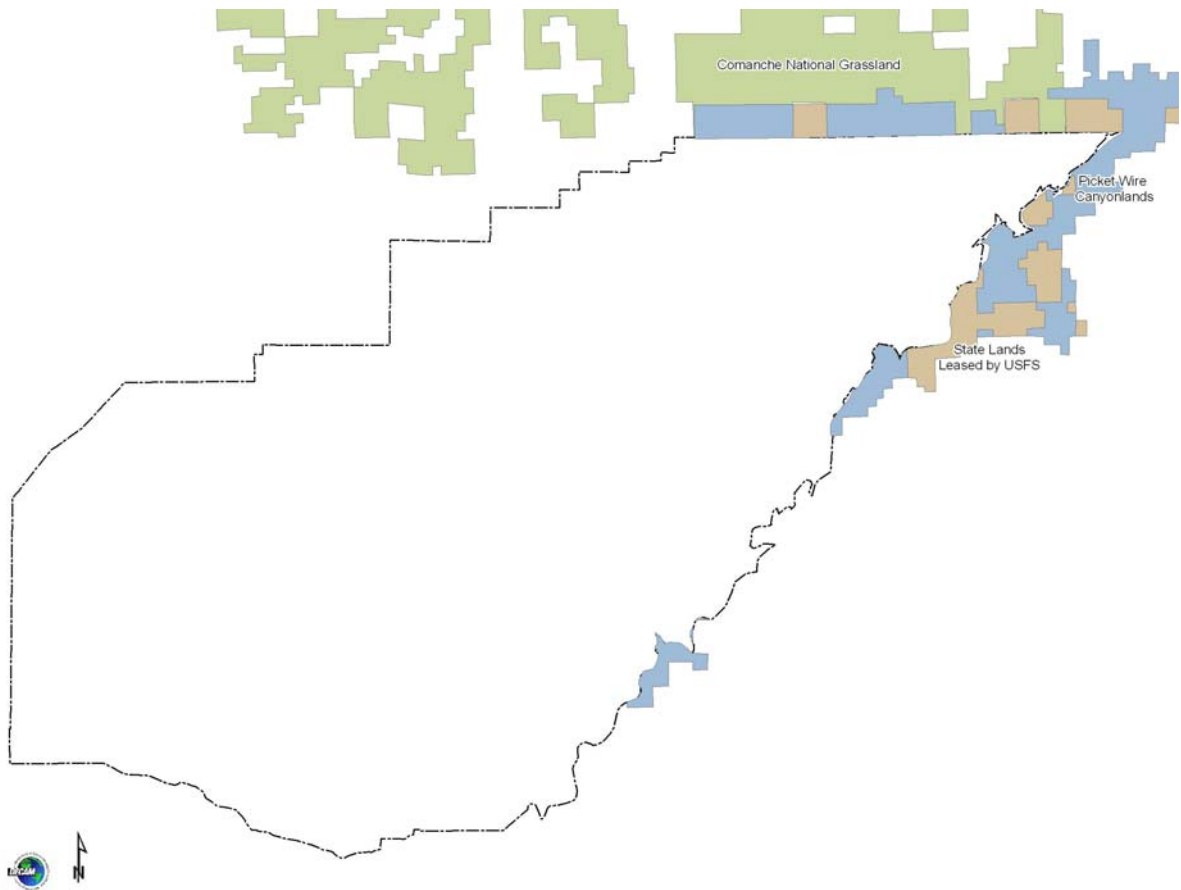
Multi-Purpose Machine Gun Range

² Green ammunition is a recent addition to small arms military training. It is not yet available for all weapons, and there are sometimes problems with availability due to relatively small amounts being produced and supply system issues. Thus, if troops training at PCMS did not have green ammunition locally available when training was scheduled to commence, lead-based ammunition would be used.

³ Calculated using the U.S. Army Standards in Training Commission manual (Fiscal Year 05 Draft), which provides allocated rounds per individual weapon system.

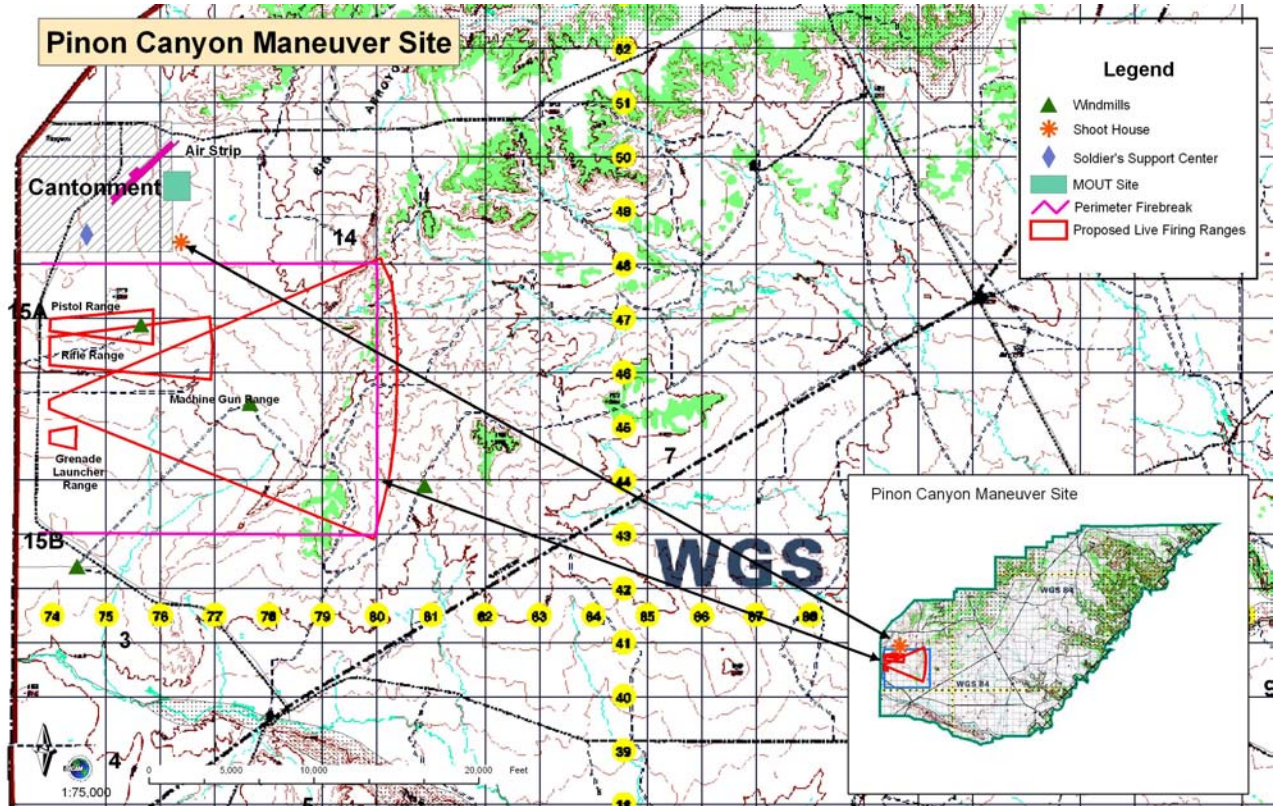
Squad Assault Weapon	2,818,720 rounds
Sniper Rifle	73,800 rounds
Machine guns	300,120 rounds
Combat Pistol Qualification Course	78,440 rounds
Modified Record Fire M-16 Range (rifle)	5,321,600 rounds
Grenade Launcher Range	16,320 rifle rounds and 44,880 40 mm rounds

Figure 2.1.1b Lands Neighboring Piñon Canyon Maneuver Site



Green – U.S. Forest Service Comanche National Grasslands
Blue – U.S. Forest Service Picket Wire Canyonlands
Brown – State lands leased by U.S. Forest Service
No color – Private lands

Figure 2.2.1. Location and Topography of Proposed Projects



The goal is to provide fully standardized ranges. Appendix A shows schematics and brief descriptions of standard Army ranges, which is the eventual goal of the Proposed Action.

Thus, ranges would be initially constructed after completion of the required NEPA process, ideally beginning in 2004. Power for ranges would initially be provided by power generators. However, as soon as possible, electric lines would be added for reliable, efficient power. Range footprints for these ranges would be to Army standard. This environmental assessment includes effects of these fully standardized ranges.

Ranges, except for Grenade Launcher Range, would use tracer ammunition, which is a pyrotechnic. Graded maintenance trails would be constructed on the edges of each range footprint to provide access for range maintenance and provide firebreaks. Ranges would be kept mowed, which would reduce the risk of fires crossing these trails/firebreaks. A 40-foot wide firebreak would be constructed and maintained around the entire range surface danger zone (Figure 2.2.1). Prescribed burning could be used to minimize effects and risks of fires escaping the surface danger zone. Ranges would have side and end berms. In addition, small dirt berms would be constructed in front of each target to protect target operating mechanisms.

Initial construction of these ranges would be accomplished by self-help (Fort Carson Range Division) and various engineer unit troop training projects.

Multi-Purpose Machine Gun Range

Fort Carson proposes to construct a Multi-Purpose Machine Gun Range (Figure 2.2.1) for long-range (up to 6,000 meters) small arms (e.g., Squad Assault Weapon, sniper rifle, machine gun) training and qualification. The range eventually would be equipped with hard-wired, electronically-actuated Remote Target Systems. Construction of the range would include site clearing and grading. Also included would be the construction of electrical and communications infrastructure, bleacher enclosure, covered stand-up dining area, ammo breakdown facility, dry-vault latrines, and a control tower.

Construction on this range is intended to begin as soon as possible after completion of the NEPA process. Initial construction would be completed in 2004. The estimated cost of the initial construction is \$750,000. Military Construction Army (MCA) construction is not planned for this range.

Modified Record Fire M-16 Range

Fort Carson proposes to construct a Modified Record Fire M-16 Range for small arms (primarily M-16 and M4 rifles) qualification. The range would be equipped with hard-wired, electronically-actuated Remote Target Systems. Construction of the range would include site clearing and grading. Also included would be the construction of electrical and communications infrastructure, bleacher enclosure, covered stand-up dining area, ammo breakdown facility, dry-vault latrines, and a control tower.

Construction on this range is intended to begin as soon as possible after completion of the NEPA process. Initial construction would be completed in 2004. The estimated cost of the initial construction is \$700,000. This range would be upgraded to standard in 2006 as a \$2.5 million MCA project (Project number 58128).

Combat Pistol Qualification Course

Fort Carson proposes to construct a Combat Pistol Qualification Course for pistol (primarily M-9) qualification. The range eventually would be equipped with hard-wired, electronically-actuated Remote Target Systems. Construction of the range would include site clearing and grading. Also included would be the construction of electrical and communications infrastructure, bleacher enclosure, covered stand-up dining area, ammo breakdown facility, dry-vault latrines, and a control tower.

Construction on this range is intended to begin as soon as possible after completion of the NEPA process. Initial construction would be completed in 2004. The estimated cost of the initial construction is \$550,000. MCA construction is not planned for this range.

Grenade Launcher Range

Fort Carson proposes to construct a Grenade Launcher Range for grenade launcher (primarily M-203, 40 mm) qualification. This range would only use practice rounds (non-explosive). Construction of the range would include site clearing and grading. Also included would be the construction of electrical and communications infrastructure, and dry-vault latrines.

Construction on this range is intended to begin as soon as possible after completion of the NEPA process. Initial construction would be completed in 2004. The estimated cost of the initial construction is \$400,000. MCA construction is not planned for this range.

2.2.2 Military Operations in Urban Terrain (MOUT) Site

Fort Carson proposes to construct a MOUT site to provide standard ranges to train soldiers in basic urban operations. The facility would consist of 32 buildings in an urban layout (i.e., streets, underground corridors, various height buildings, various type buildings, etc.) in a foreign configuration (e.g., Europe, Mideast), which has not been determined. Only blank ammunition, simunitions (plastic, non-lethal bullets), paint, short range training ammunitions, and laser weapons would be used. The

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facility would include door breaching options (using detonation cord or shotguns). Smoke munitions would be used.

The MOUT site would be located immediately to the east of the cantonment area, just southeast of the combat air strip (Figure 2.2.1). This location would allow the insertion of troops by ground or air with immediate opportunities to assault the MOUT site, a scenario commonly used in combat. The MOUT site would cover about five acres within the 65-acre study area.

MOUT facilities would include electric service, dry-vault latrines, information systems, control buildings, and a storage and maintenance facility. The MOUT site has not been designed. Funding will be pursued, and construction is proposed for 2009 via contract. The estimated cost would be \$29.0 million.

2.2.3 Soldiers' Support Center

Fort Carson proposes to construct a Soldiers' Support Center within the PCMS cantonment area in the vicinity of the existing Post Exchange and Chaplain's Trailer (Figure 2.2.1). The Center would provide soldier readiness processing for soldiers mobilizing for combat. Services provided could include medical and dental checkups, laundry facilities, haircuts, and records updates needed prior to soldier departures for combat zones. This facility, combined with the firing ranges, MOUT site, and Shoot House, would provide military units the option to use PCMS for all services required for mobilization, which would reduce overcrowding at Fort Carson during mobilization periods.

The facility would cover an area approximately 100x200 feet. Construction on the Soldiers' Support Center is intended to begin as soon as possible after completion of the NEPA process. Construction would be completed in 2004. The estimated cost would be \$700,000. It would be constructed by contract.

2.2.4 Shoot House

Fort Carson proposes to construct a Shoot House to live-fire training for individual soldiers engaged in basic urban operations, using automated targetry, enabling trainers to vary scenarios presented to trainees. This individual training is a vital complement to the unit-level maneuver and coordination training provided at the MOUT site.

Appendix A includes a schematic of a standard Shoot House and briefly describes its use, characteristics, and additional information. Weapons fired would be pistols and rifles (5.56 mm and 9 mm rounds) and grenade simulators. Walls would be two inches thick (bulletproof), either constructed of shock-absorbing concrete (preferred due to its eventual disposability in landfills) or filled with pea gravel. The facility would have a 50-meter safety buffer zone around it.

The Shoot House would be constructed to the south of the proposed MOUT site (Section 2.2.2 and Figure 2.2.1). A Shoot House is a valuable addition to MOUT training. The facility would cover an area approximately 100x100 feet. It would require site grading and have electric power, parking areas, and a general instruction facility.

The Shoot House site has not been designed. Funding will be pursued, and construction is proposed for 2008 or 2009 via contract. The estimated cost is \$1.25 million.

3. ALTERNATIVES CONSIDERED

Two alternatives were considered, No Action and Alternative Sites. The No Action Alternative would not meet the purpose and need for the Proposed Action described in Section 1.2. Alternative sites either do not meet mission requirements of these proposed facilities, interfere with ongoing PCMS missions, or have environmental constraints (*e.g.*, conflicts with historic resources, quality habitats, fragile soils).

3.1 Alternative 1 – No Action

Consideration of the No Action Alternative is required by NEPA regulations. The No Action Alternative represents status quo. It provides a basis of comparison for the Proposed Action and also addresses issues of concern by avoiding or minimizing effects associated with the Proposed Action. Under this alternative, none of the projects would be implemented. This would, in effect, have the following mission consequences.

- The 7th ID and Fort Carson would not have a means to provide small arms re-qualification training for troops whose qualifications expire while training at PCMS, which would affect overall readiness of troops for deployment.
- The 7th ID and Fort Carson would not have adequate training facilities at PCMS for troops to attain and maintain proficiency required in urban operations and in infantry tactics.
- The 7th ID and Fort Carson would not be able to provide the facilities and types of training (small arms training and qualification) at PCMS to provide well-trained soldiers in support of the Army's real world missions and modern day warfare tactics.
- The 7th ID and Fort Carson would not be able to efficiently meet its overlapping, multiple mission requirements due to overcrowding of range facilities on Fort Carson.
- The 7th ID and Fort Carson would not be able to provide one-stop mobilization training at PCMS to alleviate crowding of facilities at Fort Carson during mobilization.

However, this alternative will be considered in the environmental consequences analysis to provide a baseline for environmental conditions.

3.2 Alternative 2 – Alternative Sites

The following siting requirements must be achieved to meet mission and cost requirements for the proposed ranges, MOUT facility, Shoot House, and Soldiers' Support Center at PCMS:

- minimization of effects on the existing maneuver mission at PCMS (*i.e.*, allows the use of range firing fans for maneuver (no dud-producing ammunition) when ranges are not operative and the placement of ranges on the extreme periphery of PCMS to maintain large open maneuver areas on the interior);
- minimization of significant environmental effects (*e.g.*, avoidance of National Register of Historic Places-eligible cultural resources sites, avoidance of Native American sacred sites, avoidance of effects to federal-listed species);
- minimization of safety, health, and nuisance issues, particularly with the general public (*i.e.*, avoiding areas with existing or likely future housing, minimizing lead contamination risks, minimizing noise consideration);
- securing a reliable source of power for ranges;
- ensuring co-location of live-fire ranges;
- locating firing ranges on relatively flat topography;
- siting within the cantonment area for the Soldiers' Support Center; and
- having the capability of airfield troop insertion for the MOUT site.

The only alternative sites for the Soldiers' Support Center are all within the cantonment area since this Center must be sited for co-use of other cantonment area facilities.

The MOUT could be slightly moved, but it must be located to provide air insertion training scenarios (as used in many recent real-world combat situations). There is no reason to move the proposed site a very short distance to the north or south, which are the only adjustments possible to remain close to the combat landing strip.

There are significant issues involved with the Alternative Sites Alternative for the firing ranges.

- Interior PCMS sites are not an option due to the loss of large maneuver areas when ranges are firing.
- Eastern boundary sites are far from reliable electricity sources, are generally within fragile soil areas, are near or in sensitive wildlife areas, interfere with maneuver training, and are very inefficient to operate in terms of distance from the cantonment area.
- Northern boundary sites are generally far from reliable electricity sources, are generally within fragile soil areas, are often near or in sensitive wildlife areas, generally have topography that is not suitable for such ranges, and are generally (except in the northwest) very inefficient to operate in terms of distance from the cantonment area.
- Southern boundary sites are generally (except in the extreme southwest) far from reliable electricity sources, have significant cultural resources issues (particularly the Hogback), generally have topography that is not suitable for such ranges, and are generally (except in the southwest) very inefficient to operate in terms of distance from the cantonment area.
- Western boundary sites to the north of the cantonment area are within fragile soil areas, have topography that is not suitable for such ranges, and are closest to areas of current and future public development close to the PCMS boundary (*i.e.*, noise, safety issues).
- Western boundary sites to the south of the cantonment area have topography that is not suitable for such ranges and have significant cultural resources issues (particularly the Hogback).

This alternative will not be considered in the environmental consequences due to no alternatives that meet mission requirements.

4. AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION

This section discloses potential environmental effects of each alternative and provides a basis for evaluating these effects in context relative to effects of other actions. Effects can be direct, indirect, or cumulative. Direct effects occur at the same place and time as the actions that cause them, while indirect effects may be geographically removed or delayed in time. A cumulative effect is defined as an effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place locally or regionally over a period of time.

This environmental assessment focuses on resources and issues of concern identified during the scoping process (Section 1.3.1, *Scoping and Issues Analysis*) and on differences in effects between the Proposed Action and its alternative, No Action. Areas with no discernible or significant concerns or known effects, as identified in the scoping process (Section 1.3.2, *Issues Not Addressed or Considered to be Potentially Significant*) are not included in this analysis.

For ease in comparing environmental effects with existing conditions and mitigation specific to each environmental area of concern, each below section will describe existing conditions, describe the effects of each alternative, identify any cumulative effects on that area of concern, and describe site-specific mitigation. General mitigation that affects many of these environmental areas of concern is identified in Section 4.12, *General Mitigation*. A summary of environmental consequences is provided in Chapter 5.

4.1 Land and Airspace Use

4.1.1 Existing Conditions

Military Use

PCMS has had Initial Operation Capability since 1985 to provide critical maneuver lands for larger units on Fort Carson and from other installations in the area. Available maneuver area is 158,620 acres. The cantonment area contains administrative buildings and support facilities that are used during training exercises. No live fire exercises are currently conducted at PCMS. PCMS is utilized for a variety of training missions to include brigade or regiment-size maneuvers, battalion or squadron-size maneuvers, and support operations, such as supply, communications, aviation, etc.

There are no restricted designations for military or civilian use of airspace over PCMS.

Recreation Use

PCMS has virtually no resident community, and access to the installation is restricted, which affect outdoor recreation opportunities. Hunting is the primary activity, and hunters are allowed to camp in designated areas. Figure 3.4.5b in the Integrated Natural Resources Management Plan (Gene Stout and Associates 2002a) indicates areas open to hunting on PCMS, which include the proposed firing range sites. Other outdoor recreation activities include bird watching, nature study, photography, and similar activities. There is no recreational fishing potential on PCMS.

A permission letter, issued by the DECAM Wildlife Office, is required to enter adjacent public lands from PCMS. Permission must be requested from the DECAM Wildlife Office in writing 30 days in advance.

4.1.2 Environmental Consequences

Proposed Action.

The Proposed Action would remove those areas where facilities are constructed (*e.g.*, buildings, parking lots, targetry) from maneuver lands. In addition, the live-fire ranges' firing fans would be off-limits to maneuver during range operations. There would be no other changes to military land use.

Airspace over the proposed firing ranges (Fig. 2.2.1) would be closed during those periods when the ranges are active. The 7th ID and Fort Carson would obtain a Controlled Firing Area designation through the Federal Aviation Administration to accomplish this action, via FAA Order 7400.2E, *Procedures for Handling Airspace Matters*. Airspace would not be changed from current designations during periods when the ranges are not being used.

There would be no changes to recreational land use policies. However, when ranges are being used, they would be off-limits to recreational use.

No Action

The No Action alternative would have no effects on military or recreational land or airspace use at PCMS.

4.1.3 Cumulative Effects

Proposed Action

The 7th ID and Fort Carson military mission can be expected to continue to evolve, in some cases relatively dramatically, as the U.S. armed forces evolve in terms of military units, military equipment, and tactics/strategies change to meet changing threats to U.S. security. Such changes are expected to continue in the future, as they have done so in the past. However, the nature of these changes with respect to changes at PCMS is difficult to predict due to rapidly changing technology, military tactics and strategy, and world events affecting military activities.

The Proposed Action is another action in this process of an evolving military mission and required new training facilities. Field training for troops using PCMS now requires facilities to support urban combat training and re-qualification with small arms. Military planners recognize that range development beyond current levels, in terms of total acreage, results in a loss of maneuver land, which is critical to military training. Thus, there will continue to be efforts to balance range development with the need for undeveloped lands with natural environments for realistic maneuver training.

Proposed projects are examples of changes in training requirements that would result in new training facilities at PCMS. The MOUT site and Shoot House are currently critical due to changed requirements for U.S. military response that involve conducting operations in urban environments. Some facilities associated with the MOUT are relatively new designs. The firing ranges are required due to the addition of new military missions, particularly the use of Reserve Component forces, which are taxing the capacity of ranges at Fort Carson.

The loss of even small areas for maneuver training is a cumulative land use effect. The effects would be small, and the trade-off for improved training and mobilization readiness would be well-worth the loss of small areas and certain time-frames for maneuver training. These maneuver land losses would be reversible.

No Action

There would be no cumulative impact from the combined environmental effects on land or airspace use of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

4.1.4 Site-specific Mitigation

Proposed Action

Sites for the Proposed Action have been selected to maintain large maneuver areas to the greatest degree possible. Areas within range firing fans, beyond targetry, would be open to maneuver when ranges are not operative. Non-dudding ammunition would be used to enable maneuver to occur. Airspace use restrictions would be confined to those periods of firing range use.

No Action

Land or airspace use mitigation would not be required.

4.2 Soils

Additional information regarding soils on PCMS is within the Integrated Natural Resources Management Plan (INRMP) (Gene Stout and Associates 2002a).

4.2.1 Existing Conditions

There are 31 soil series and associations recognized on the PCMS. The distribution of soil types is shown on INRMP Figure 3.2.4b (Gene Stout and Associates 2002a). Soils most commonly affected by erosion are clays, silty clays, and clay loams. Specific information concerning soils can be obtained from the Soil Survey of each individual county area, conducted by the Natural Resources Conservation Service.

PCMS contains four major landscape types. Each landscape type has a characteristic pattern of soils as described briefly below (Nakata Planning Group, LLC 2000).

The first landscape type, located in the western part of PCMS, is dominated by a flat to gently sloping plain. Soils in this portion are formed in wind-deposited lifts with occasional small ridges of limestone outcropping in some areas. Soils are generally silty and weakly developed and are calcareous throughout. One small area of sand dunes crosses midway through this landscape type. Soils dominating this landscape are included within the Loamy Plains Range Site on upland flats, Saline Overflow Range Site in depressions and along intermittent drainages, and Sandy Plains Range Site in sand dunes. This landscape type generally has a medium stability rating and will experience moderate soil losses by water erosion and high soil losses by wind erosion if disturbed. Most effects of the Proposed Action would occur within this type.

The second major landscape type is composed of limestone ridges, which cross the northwestern corner of PCMS and form a small divide oriented to the south in the western portion of the training area. These areas would not be affected by the Proposed Action.

The third major landscape type occurs between the limestone ridges and the Purgatoire River. It is composed of a wide valley that crosses the PCMS from southwest to northeast. These areas would not be affected by the Proposed Action.

The fourth landscape type is where the Purgatoire River canyon and associated side canyons form a series of steep rock-strewn cliffs and rolling mesa tops. These areas would not be affected by the Proposed Action.

The Natural Resources Conservation Service has identified 15 range sites on PCMS. These sites are: Alkaline Plains, Basalt Breaks, Gypsum Breaks, Limestone Breaks, Loamy Plains, River Bottom, Sandstone Breaks, Salt Flats, Saline Overflows, Sandy Plains, Shaly Plains, Sandy Bottomlands, 80% Loamy Plains/20% Gravel, Shaly Plains/Loamy Plains, 75% Shaly Plains/25% Limestone Breaks, and Unknown. Loamy Plains is the most common (40%) range site type on PCMS.

4.2.2 Environmental Consequences

Proposed Action

Figure 4.2.2 and Table 4.2.2 indicate range sites⁴ potentially affected by the Proposed Action. In order to accommodate potentially small changes in range location and orientation, larger than actual firing range and MOUT study areas were evaluated.

Table 4.2.2. Range Sites Potentially Affected By Proposed Projects

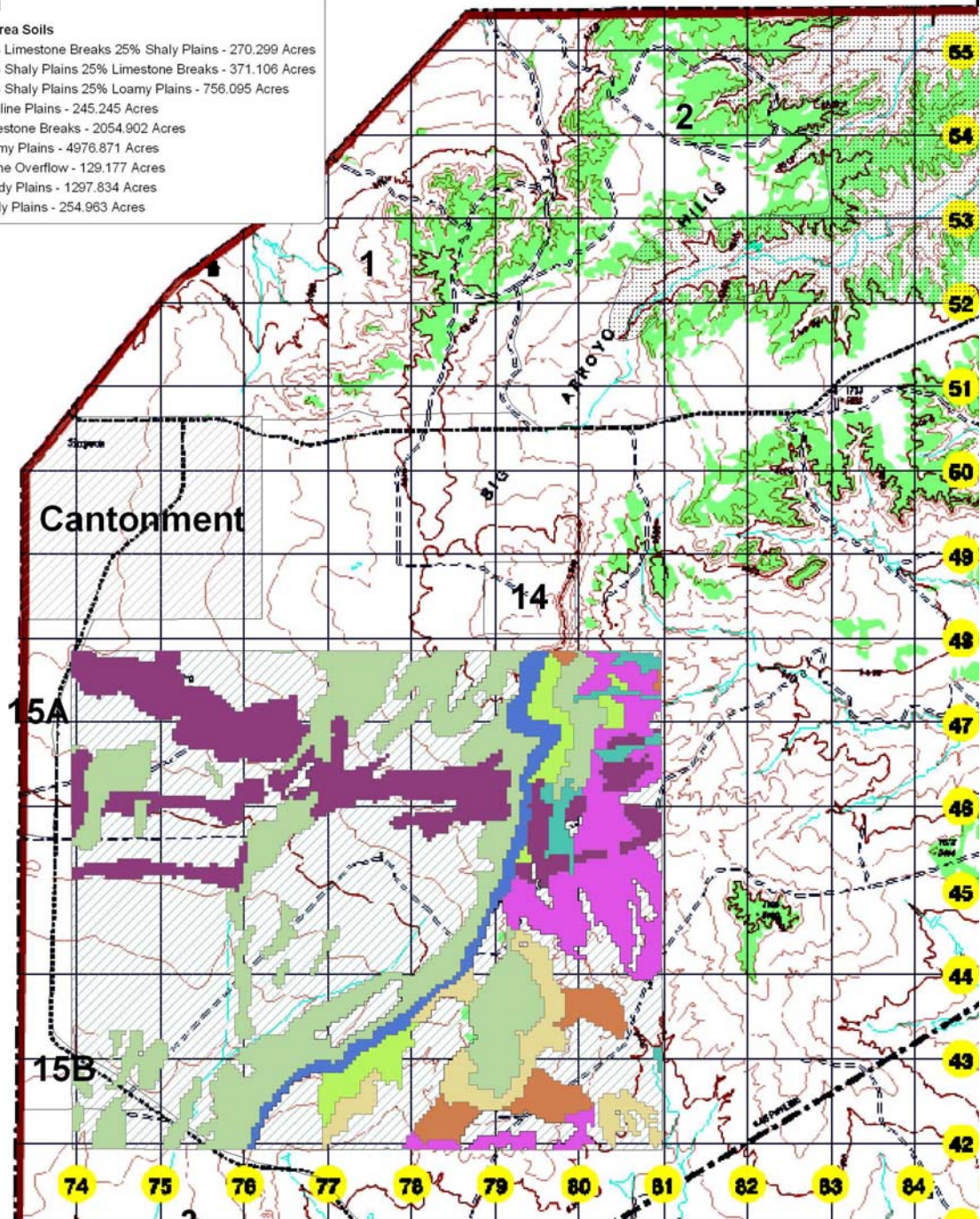
Range Sites	Acreages of Proposed Projects			Total Area
	Firing Ranges	MOUT Site	Shoot House	
Loamy Plains	4,976.9	17.3	1.8	4,996.0
Limestone Breaks	2,054.9		0.1	2,055.0
Sandy Plains	1,297.8	48.2		1,346.0
75% Shaly Plains, 25% Loamy Plains	756.1			756.1
75% Shaly Plains, 25% Limestone Breaks	371.1			371.1
75% Limestone Breaks, 25% Shaly Plains	270.3			270.3
Shaly Plains	255.0			255.0
Alkaline Plains	245.2			245.2
Saline Overflow	129.2			129.2
Totals	10,356.5	65.5	1.9	10,423.9

The Soldier's Support Center is not included in Table 4.2.2. It would be constructed on already heavily disturbed soils in the cantonment area. The MOUT site study area and the Shoot House are not included in Figure 4.2.2. The Loamy Plains range type is found on the northern border and southwestern corner of the MOUT site study area with the remaining being Sandy Plains. The Shoot House site is almost all Loamy Plains.

Figure 4.2.2. Range Sites Potentially Affected by the Proposed Action

⁴ Soil Conservation Service. Circa 1983-84. *Pinon Canyon Soil Survey, Las Animas County, Colorado*. Prepared for U.S. Army, unpublished.

Pinon Canyon Maneuver Site



Firing ranges (range facilities, targetry, and firing fans) would potentially affect soils via construction. Areas disturbed by construction could experience soil losses by water and wind erosion, unless such disturbance is mitigated. Shale and limestone soils are most susceptible to erosion and would be the most difficult to remediate.

Proposed construction would not have any effects on soils beyond construction sites. There would be no requirement for borrow sites beyond very small amounts (*e.g.*, small targetry berms) from the immediate area of construction. Operation of live-fire ranges would affect soils through the impact of small arms munitions within range firing fans. These rounds would not be explosive, so effects would be very small.

There is no known contamination of soils on proposed sites at PCMS. The use of green ammunition (*i.e.*, non-toxic bullets) as the ammunition of choice (when available) would minimize the potential of significant toxic materials (primarily lead) in the soils. Minimal rainfall and a relatively flat topography in downrange areas would minimize the water transport of spent munitions.

No Action

Soils would not be affected under this alternative. No new construction would occur, and erosion rates would not exceed those occurring at the present.

4.2.3 Cumulative Effects

Proposed Action

There is no evidence that Army use of PCMS has increased soil losses over immediately previous uses of this land (primarily grazing), and it is likely that less soil loss now occurs than prior to Army use of the land. However, Army occupation of PCMS resulted in a relatively permanent changed soil structure where construction has occurred (*e.g.*, cantonment area, combat landing strip, improved roads). The Proposed Action continues this process on those areas where buildings and other facilities would be located. This cumulative effect would not be significant.

No Action

There would be no cumulative effect from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

4.2.4 Site-specific Mitigation

Proposed Action

Best management practices to control erosion, such as the use of silt fences, would be used to ensure soils do not erode from sites disturbed by project construction. If contamination on construction sites is discovered during preconstruction or construction, appropriate soil remediation would be implemented. Green ammunition would be used to the greatest extent possible, provided that adequate supplies exist.

No Action

Soil damage or contamination mitigation would not be required.

4.3 Air Quality

The Federal Clean Air Act authorizes the Environmental Protection Agency to establish national ambient air quality standard to protect public health. Standards for six pollutants (*i.e.*, ozone, carbon

monoxide, nitrogen dioxide, sulfur dioxide, inhalable particulate matter, and lead particles) have been adopted.

4.3.1 Existing Conditions

Federal Clean Air Act regulations enforced by both the County and State Air Pollution Control Divisions affect military land use planning and training via two main avenues, fugitive dust and pyrotechnic smoke devices. Regulations require control of fugitive emissions, like smoke and dust, to limit off-site effects and also protect the general health of local residents, including soldiers involved in training.

The largest effect from the aforementioned regulations is from enforcement of a temporary one-kilometer boundary buffer exception in which no pyrotechnic smoke-generating device (except hand held smoke – 300-meter buffer) may be utilized. The temporary buffer, an exemption from the three-kilometer buffer in the Colorado Quality Control Commission's Regulation No. 1, is intended to ensure that smoke from PCMS in excess of 20 percent opacity does not leave the installation. The buffer often results in additional considerations and expertise in long-term land use planning as well as daily planning of training exercises near the PCMS boundary.

Las Animas County is in attainment for all National Ambient Air Quality Standard for Emissions of Particulate Matter 10 microns (PM₁₀) or less in diameter. PM₁₀ emissions are generally particulates that are inhaled into the lungs. Health problems, especially respiratory problems, have been associated with high levels of PM₁₀. Major sources of PM₁₀ are street sanding and wood burning. Dust and large particulates are not direct sources of PM₁₀, but they can contribute to the problem in the long-term as they are subject to mechanical breakdown on road surfaces. In past years, the air quality monitoring program at PCMS measured levels of two variables, Total Suspended Particulates and PM₁₀. Air quality is not currently being monitored.

4.3.2 Environmental Consequences

Proposed Action

The Directorate of Environmental Compliance and Management would prepare a Clean Air Act Conformity Analysis and/or obtain Colorado or County air permits for construction of the projects, if required. The operation of heavy equipment during construction of the projects would release a non-significant amount of carbon monoxide into the air. Appropriate emission control devices on vehicles would minimize effects to air quality during construction.

Operation of the facilities would result in minor amounts of additional energy production (primarily electricity), which could increase emissions from the power plant. This effect would be neither significant nor detectable. Smoke would be used in MOUT and Shoot House facilities.

No Action

Air quality would be unaffected under the No Action Alternative.

4.3.3 Cumulative Effects

Proposed Action

Environmental effects from past and current Army actions, when added to the anticipated environmental effects of the Proposed Action, would not result in any significant effect to air quality.

Therefore, there would be no cumulative effect from the combined environmental effects of the Proposed Action and those of past, present and reasonable foreseeable future actions.

No Action

There would be no cumulative impact on air quality from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

4.3.4 Site-specific Mitigation

Proposed Action

Air quality mitigation would not be required.

No Action

Air quality mitigation would not be required.

4.4 Noise

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. Sound quality criteria developed by the U.S. Environmental Protection Agency, U.S. Department of Housing and Urban Development, and the Department of Defense have identified noise levels to protect public health and welfare with an adequate margin of safety. These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting.

4.4.1 Existing Conditions

The most important source of noise at the PCMS originates from short-term military training exercises and military aircraft operations. PCMS baseline noise levels are about 48 decibels, increasing about 10 decibels during training events. More accurate noise data will be collected, beginning in 2004.

4.4.2 Environmental Consequences

Proposed Action

The Proposed Action would create two general types of noise: temporary construction noise and military operations noise. During construction, noise levels would increase in the immediate vicinity of the construction. This temporary noise would not go beyond the immediate area and would not affect lands off PCMS.

Military operations noise from the Proposed Action would consist of small arms noise. Small arms noise is more localized than that of large caliber weapons. None of the proposed ranges would generate additional noise contours off of PCMS. Therefore, noise levels from small arms firing would be compatible with land use off the installation according to federal guidelines. Table 4.4.2a lists expected maximum levels for the small arms that will be fired. Actual noise levels could be +/- 5 dB depending on weather conditions.

The range of levels shown in the tables is caused by changes in sound propagation conditions between the source and receiver. The primary cause of the range in levels is the wind direction. The lower numbers approximate levels expected when the receiver is upwind of the source, and higher numbers are when the receiver is downwind. Levels listed in the tables do not include any reduction in the noise caused by natural or man-made terrain between the source and receiver, such as hills and berms.

Table 4.4.2a. Small Arms Noise Levels

Maximum Noise Levels (dBA) For M16- 5.56mm Rifle

Direction of Fire-Degrees	1000m	2000m	3000m
0	65	55	48
45	63	53	46
90	58	48	40
180	46	36	29

Maximum Noise Levels (dBA) For M60- 7.62mm Machine Gun

Direction of Fire-Degrees	500 m	1000m	2000m	3000m
0	71	62	54	49
45	70	61	53	48
90	67	57	48	42
180	56	46	36	30

m – meters

Maximum Noise Levels for M2 (.50 caliber Machine Gun)

Predicted Level, dBA

Distance, meters	Azimuth				
	0°	45°	90°	135°	180°
50	104-116	102-114	97-109	92-104	90-102
100	95-109	93-107	88-102	83- 97	81- 95
200	86-102	84-100	79- 95	74- 90	72- 88
500	74- 92	72- 90	67- 85	62- 80	60- 78
1,000	65- 85	63- 83	58- 78	53- 73	51- 71
2,000	56- 78	54- 76	49- 71	44- 66	42- 64

Since the proposed live-fire ranges would fire 180 degrees from the PCMS western boundary, none of the weapons would create off-PCMS noise above 64 dBA, regardless of wind conditions⁵. The nearest residence is well over 3,000 meters 180 degrees from the ranges; thus, levels of noise at this location would be considerably less than 64 dBA, and far less when the wind is from any direction but the east, which is not a common wind direction.

A Swedish study of annoyance caused by noise from shooting ranges (Sorensen and Magnusson 1979) showed the annoyance for this type of noise is low up to a certain threshold, after which it increases relatively quickly. For the A-weighted, fast-time, integrated maximum level, this threshold is approximately 63 dBA. At levels below this threshold, less than 2 percent of the population exposed to the noise consider themselves to be highly annoyed. At the threshold level, the percent highly annoyed increases to 10 percent and continues to increase as the noise level increases. Table 4.4.2b indicates the percentage of population highly annoyed from small arms range noise.

⁵ The 64 dBA maximum noise is based on 2,000 meters. Actual maximum noise would be less than 64 dBA since it would be generated by the .50 caliber machine gun for which 3,000-meter data are not available.

Table 4.4.2b. Small Arms Noise Effects

	Percent Highly
dBA	Annoyed
< 63	2
63	10
65	13
70	21
75	29
80	38

Proposed ranges at PCMS are located at such distances from the boundary that small arms firing, including at the Shoot House, would not generate off-post noise effects. Proposed ranges are directed to the interior of the installation. In general, distance from boundaries, coupled with the direction of fire, would keep small arms noise levels low enough that there would be an extremely low risk of noise complaints.

No Action

The noise environment would be unaffected under the No Action Alternative.

4.4.3 Cumulative Effects

Proposed Action

The use of Proposed Action facilities at PCMS, particularly the firing ranges, would have a minor cumulative effect on the noise environment. Military operations of the proposed facilities would create noise; thus, the effect would occur, however minimal it would be, and it would be cumulative. Although no definitive data are yet available on noise levels at PCMS, there is no reason to suspect they are significant.

Noise effects from past and current Army actions, when added to the anticipated environmental effects of the Proposed Action, would not result in any significant effect to the noise environment. Therefore, there would be no cumulative effect from the combined environmental effects of the Proposed Action and those of past, present and reasonable foreseeable future actions.

No Action

There would be no cumulative effect on the noise environment from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

4.4.4 Site-specific Mitigation

Proposed Action

When small arms ranges and/or the Shoot House are in use, the area downrange would not be used to create maneuver-related noise, which would help mitigate the time-specific effects of noise from the firing ranges.

No Action

Land use mitigation would not be required.

4.5 Water Resources

Additional information regarding water resources on PCMS is in the INRMP (Gene Stout and Associates 2002a). Unless stated otherwise, below information is from that source.

4.5.1 Existing Conditions

PCMS includes several major drainages. The Big Arroyo drainage system is located in the northwest region and flows into Timpas Creek, which is approximately three miles northwest of PCMS. The Purgatoire River and 10 ephemeral, intermittent, or perennial tributaries are also located within and adjacent to PCMS (Bramblett 1989). The Purgatoire River, which flows in a northeasterly direction, is a seventh-order tributary to the Arkansas River. These drainages are not within Proposed Action areas.

Primary sources of groundwater on the installation are the Dakota Sandstone Formation and the Cheyenne Sandstone Member of the Purgatoire Formation (Von Guerard *et al.* 1987). Groundwater movement in the northeastern parts of the PCMS generally is toward the northeast, and groundwater movement throughout the remainder of the PCMS (where the Proposed Action would occur) is toward the east and southeast. Recharge of the aquifer is primarily from precipitation and subsurface inflow from adjoining areas. Where outcrop areas are traversed by ephemeral streams, occasional flood flows provide some local recharge of very limited areal extent (Von Guerard *et al.* 1987).

There are approximately 80-drilled wells on PCMS. Wind or solar energy powers wells that are currently functional. Several major wells have distribution lines associated with them to fill stock tanks, now used for wildlife management and fire suppression.

4.5.2 Environmental Consequences

Proposed Action

Soil disturbance (potential waterway sedimentation) would occur during construction, but best management practices to control erosion, such as the use of silt fences, would be used to ensure increased sedimentation does not enter waterways. Minimal rainfall and a relatively flat topography in downrange areas would minimize the water transport of disturbed soils and spent munitions into waterways. The Directorate of Environmental Compliance and Management would obtain any required storm water permits.

Four windmills are within the firing range study area. Two of them are downrange of proposed live-fire ranges, and they could be damaged by operation of the proposed ranges (Figure 2.2.1). Any windmills in danger of being damaged would be converted to solar power. They would be retained to be used for fire suppression and wildlife use (when ranges not in operation). Ranges whose firing fans include these water areas would be visually checked for wildlife prior to range operation.

The proposed location of the firing ranges is in the recharge path for the Dakota/Purgatoire aquifer, which is a major source of groundwater for residential wells in this region. There are about six wells within five miles of the cantonment that derive their water from this aquifer. "Green ammunition" contains some lead and nitrates in the primer and gunpowder, which settles on the soil. The lead is relatively immobile in the existent soil conditions, but the nitrate is mobile and has the potential to contaminate groundwater.

The geology at the proposed small arms ranges is very favorable. The lower Niobrara Formation (Fort Hays Limestone Member) is at the surface and most likely continues about 100+ feet subsurface until the Dakota-Purgatoire subcrops. The Niobrara is very impermeable to infiltration and any incident

precipitation runs off outcrops. Any contaminants derived from the proposed ranges (minor lead and nitrates) would not be a significant risk to local drinking water sources.

Alternative 1 – No Action

Neither surface nor ground water would be affected under the No Action Alternative.

4.5.3 Cumulative Effects

Proposed Action

Water resources effects from past and current Army actions, when added to the anticipated environmental effects of the Proposed Action, would not result in any significant effect to area water resources. Therefore, there would be no cumulative effect from the combined environmental effects of the Proposed Action and those of past, present and reasonable foreseeable future actions.

No Action

There would be no cumulative effect on water resources from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions on water resources.

4.5.4 Site-specific Mitigation

Proposed Action

The use of green ammunition (*i.e.*, non-toxic bullets) as the ammunition of choice (when available) would minimize the potential of significant toxic materials (primarily lead) entering waterways or groundwater. Even if green ammunition were not available, spent lead would not be transported to waterways considering the distance (over 12 straight-line miles to the Purgatoire River) to waterways, the relatively flat topography, and scant rainfall. There is no evidence to suggest that any spent lead would enter groundwater aquifers. Best management practices to control erosion, such as the use of silt fences, would be used to ensure increased sedimentation does not enter waterways.

Standard spill prevention measures would be taken during construction and operation of the proposed facilities. If contamination on construction sites is discovered during preconstruction or construction, appropriate soil remediation would be implemented to protect surface and ground waters. Green ammunition would be used to the greatest extent possible; provided that adequate supplies exist.

Pollutants; petroleum, oil, and lubricants; and any hazardous materials associated with military operations at Proposed Action facilities may directly affect soil resources. All military units are required to possess and have available appropriate spill response materials for types and quantities of hazardous materials they may transport to support military operations. Any spills would be promptly cleaned up. All spills/releases greater than five gallons would be reported to Range Control, who would notify the Fire Department for spill response. Spills greater than five gallons and those that enter waterways would be reported to the Directorate of Environmental Compliance and Management, which would then follow through with appropriate mitigative measures and notify applicable federal and state agencies.

No Action

Water resources mitigation would not be required.

4.6 Hazardous Waste/Materials

4.6.1 Existing Conditions

A limited variety of hazardous/toxic materials are used on PCMS. No hazardous waste is stored at PCMS.

Asbestos-containing Materials and Lead-based Paint

Ranches at PCMS were built during a time when asbestos and lead-based paint were commonly used for construction. Neither material is likely to be found in the Cantonment Area.

Pesticides

The 7th ID and Fort Carson, as required by Department of Army policies, emphasizes integrated pest management. However, pesticides may be required for insect and rodent control and control of undesired vegetation, including noxious weeds. Pesticides used on the PCMS are described in the *Integrated Pest Management Plan* (7th ID and Fort Carson 2001a).

Munitions

There are no munitions stored or used at the PCMS except pyrotechnic devices. Field Ammunition Supply Points (trucks parked in formation) are used to transport and issue smoke munitions and blank ammunition.

Storage Tanks

Larger gas, diesel, and heating fuel storage tanks at PCMS are located within the Cantonment Area. Smaller aboveground fuel tanks are located at Big Canyon, Biernacki, Sharps, and Red Rocks ranches. The five underground and 10 aboveground storage tanks have a capacity of about 130,000 gallons combined. All tanks are equipped with modern spill prevention technologies and are in compliance with applicable laws and regulations.

4.6.2 Environmental Consequences

Proposed Action

The likelihood to encounter contamination on proposed project sites is remote. Any discovery of hazardous material contamination would require appropriate regulatory coordination and compliance. Construction digging has the potential to expose contaminated soil from historic use of sites. If contamination is encountered, appropriate measures would be taken to remediate the site.

Facility operation is not anticipated to generate hazardous substances beyond those already occurring on the area due to military operations (such as smoke pots which are handled in accordance with Fort Carson Regulation 200-1), with exception of the storage and use of munitions. Initially, ammunition for the firing ranges would be transported to PCMS in trucks and issued via Field Ammunition Supply Points, with appropriate security and accountability procedures for live ammunition. Eventually, an Ammunition Storage Point (buildings, security fencing, and guards) would be required, but that is beyond the scope of this Proposed Action and would require specific NEPA analysis.

During those periods when green ammunition is not available, lead-contaminated rounds would be deposited downrange. Minimal rainfall and a relatively flat topography in downrange areas would minimize the water transport of spent munitions.

No Action

No additional hazardous material materials would be used or hazardous wastes would be generated under the No Action Alternative beyond those already being used or generated at PCMS.

4.6.3 Cumulative Effects

Proposed Action

The use of Proposed Action facilities at PCMS, particularly the firing ranges, could have a minor cumulative effect on hazardous waste. Military operations of the proposed firing ranges would deposit lead-contaminated munitions downrange; thus, the effect would occur, however minimal it would be, and it would be cumulative. There is no reason to suspect the deposition of such wastes with no measurable chance of migration to groundwater or waterways would be significant.

Environmental effects from past and current Army actions, when added to the anticipated environmental effects of the Proposed Action, would not result in any significant effect to hazardous materials or wastes. Therefore, there would be no cumulative effect from the combined environmental effects of the Proposed Action and those of past, present and reasonable foreseeable future actions.

No Action

There would be no cumulative effect from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions on the use or generation of hazardous materials/wastes.

4.6.4 Site-specific Mitigation

Proposed Action

The use of green ammunition (*i.e.*, non-toxic bullets) as the ammunition of choice (when available) would minimize the potential of significant hazardous waste (primarily lead) being generated by operation of small arms ranges.

Standard spill prevention measures would be taken during construction and operation of the proposed facilities. If contamination on construction sites is discovered during preconstruction or construction, appropriate soil remediation would be implemented.

Pollutants; petroleum, oil, and lubricants; and any hazardous materials associated with military operations at Proposed Action facilities may directly affect water and soil resources. All military units are required to possess and have available appropriate spill response materials for types and quantities of hazardous materials they may transport to support military operations. Any spills would be promptly cleaned up. All spills/releases greater than five gallons would be reported to Range Control, who would notify the Fire Department for spill response. Spills greater than five gallons and those that enter waterways would be reported to the Directorate of Environmental Compliance and Management, which would then follow through with appropriate mitigative measures and notify applicable federal and state agencies.

No Action

Hazardous materials/waste mitigation would not be required.

4.7 Flora

Additional information regarding flora on PCMS is in the INRMP (Gene Stout and Associates 2002a). Unless stated otherwise, below information is from that source.

4.7.1 Existing Conditions

INRMP Figure 3.3.1b (Gene Stout and Associates 2002a) show very general vegetation types on PCMS.

General

Grasslands comprise about 52% of PCMS and are usually classified as shortgrass prairie. Major grasses include blue grama, western wheatgrass, galleta, sideoats grama, dropseeds, buffalo grass, little bluestem, and needle and thread grass. Various shrubs scattered throughout the grasslands are prickly pear cactus, cholla cactus, yucca, four-winged saltbush, rabbitbrush, and skunkbush sumac.

Shrublands, typically with grass understory, comprise about 22% of PCMS vegetation. Coniferous shrubland, dominated by pinyon pine and one-seed juniper, is found throughout PCMS. Deciduous shrubland, whose species include Gambel oak, salt cedar, and willow, is found along major drainageways.

Forest/Woodlands constitute about 26% of PCMS. Pinyon pine and one-seed juniper are the dominant species of higher elevation woodlands on rocky and steeper slopes, and cottonwood and willows dominate woodlands of drainageways.

Vegetation at PCMS occurs as a result of many factors. Climactic distinctions have determined temperatures and precipitation. Droughts of the 1920s and 1930s may have influenced the current vegetation. Parent materials have dictated soil types. The mosaic of vegetation on the PCMS is due, in part, to soils that developed from sandstone, limestone, basalt, and shale parent materials. Variations in topography have affected the occurrence of plant species. Land use practices have also altered the vegetation. Fire as a natural ecological process has been eliminated or controlled by man. Prior to 1983, the PCMS was ranched for over 100 years. Undoubtedly, pressures associated with grazing have affected the area (Shaw *et al.* 1989a).

Condition Trends

Land Condition Trend Analysis data for the PCMS show that land condition improved from the time of acquisition through about 1992 and has been relatively stable since then.

Floral Inventory

Lists of plant species found on PCMS are maintained and annually updated in Word® files within the DECAM (Appendix 3.3.1.2b in the INRMP [Gene Stout and Associates]). Previous lists are found in the Gap analysis report (species of special concern) (Canestorp 1997) and Shaw *et al.* (1989a, 1989b).

Special Interest Areas

Special interest areas on PCMS are shown in INRMP Figure 3.4.2.1b (Gene Stout and Associates 2002a).

The **Soil Protection Area** (20,696 acres) is off-limits to mechanized military maneuver and has very limited administrative vehicular access due to fragile soils in this area.

Canyonlands (29,452 acres) along the Purgatorie River are off-limits to mechanized military maneuver and have very limited administrative vehicular access due to their fragile soils, cultural resources, steep topography, and wildlife/ecosystem values.

The **Hogback** (3,778 acres) is off-limits to mechanized military maneuver and has very limited administrative vehicular access, primarily due to its cultural resources but in part due to its overall ecosystem values.

The **Wildlife Protection/Buffer Area** (10,731 acres) is between the boundary fence and the legal property line. It is off-limits to military training.

No-dig Areas include all of the above areas on PCMS plus much smaller areas designed to protect isolated features, generally cultural resources. No-dig restrictions are imposed to protect cultural resources and sensitive soils.

Wetlands

The estimate of existing wetlands on the PCMS is 4,776 acres. Wetlands at PCMS are generally classified as either linear or isolated. Larger drainages, such as Van Bremer Arroyo, are classified as linear. Isolated wetlands are small, usually less than five acres, and normally are associated with erosion control dams in smaller, intermittent, eroded drainages. Wetlands have been mapped as part of the National Wetland Inventory, and representative areas are monitored on a regular basis for sediment. The most prominent wetland plant species are cottonwood trees, cattails, willow and salt cedar. Most wetlands on PCMS are associated with side canyons of the Purgatorie River and water developments.

4.7.2 Environmental Consequences

Proposed Action

General Vegetation

Figure 4.7.2 and Table 4.7.2 indicate vegetation types potentially affected by the Proposed Action, with exception of the Shoot House, which is not shown in Figure 4.7.2. Larger than actual study areas were evaluated to accommodate potentially small changes in range location and orientation.

Table 4.7.2. Vegetation Potentially Affected By Proposed Projects

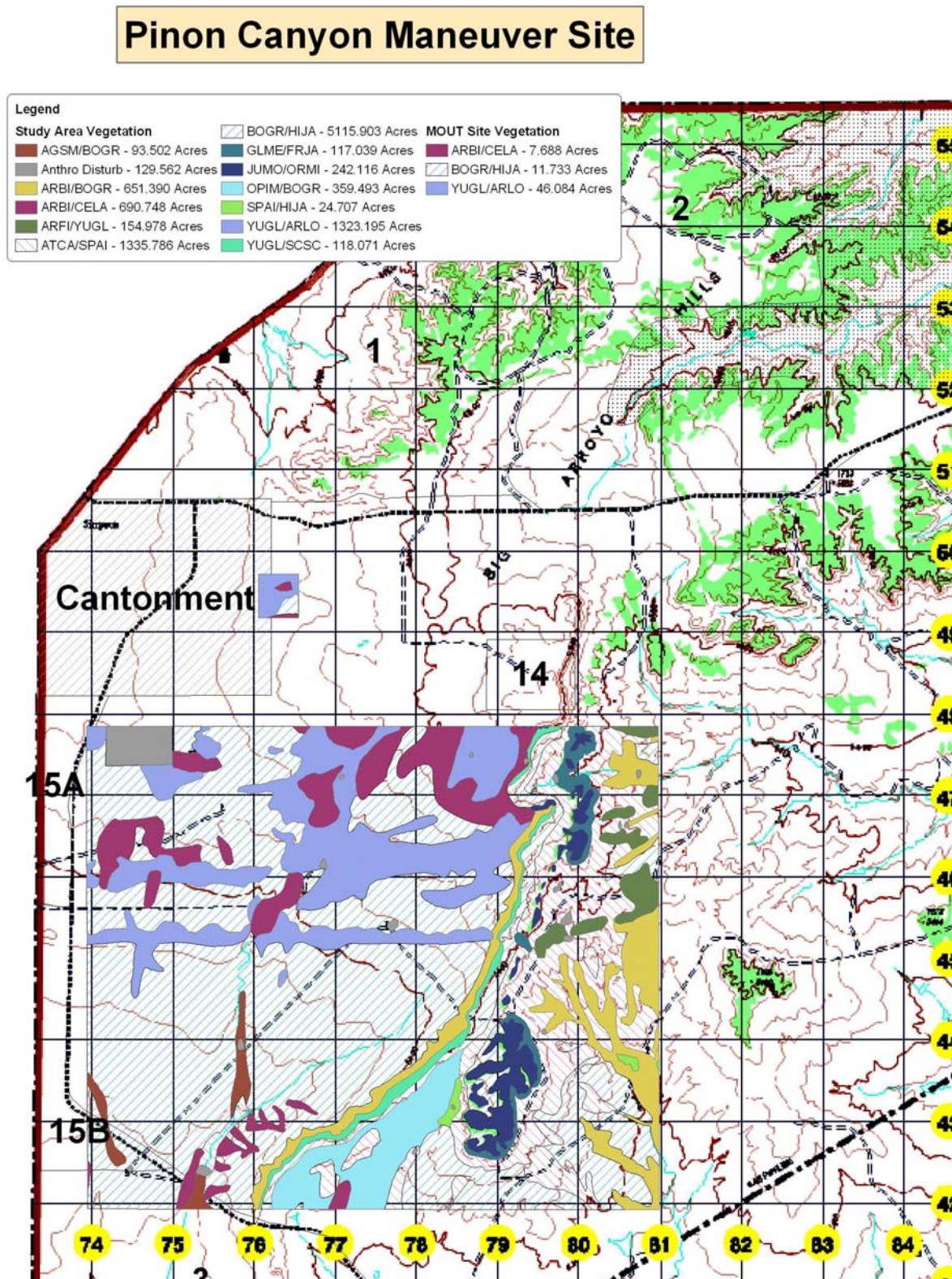
Plant Communities (Map Abbreviation)	Proposed Projects Acreage				Total Area
	Firing Ranges	MOUT Site	Soldiers Support Center	Shoot House	
blue grama/galleta (BOGR/HIJA)	5,115.9	11.8		1.9	5,129.6
fourwing saltbush/alkali sacaton (ATCA/SPAI)	1,335.8				1,335.8
small soapweed/red threeawn (YUGL/ARLO)	1,323.2	46.1			1,369.3
Bigelow sagebrush/winterfat (ARBI/CELA)	690.7	7.7			698.4
Bigelow sagebrush/blue grama (ARBI/BOGR)	651.4				651.4
tree cholla/blue grama	359.5				359.5

Plant Communities (Map Abbreviation)	Proposed Projects Acreage				Total Area
	Firing Ranges	MOUT Site	Soldiers Support Center	Shoot House	
(OPIM/BOGR)					
one-seeded juniper/littleseed ricegrass (JUMO/ORMI)	242.1				242.1
sand sagebrush/small soapweed (ARFI/YUGL)	155.0				155.0
soapweed/little bluestem (YUGL/SCSC)	118.1				118.1
greasewood/James frankenia (GLME/FRJA)	117.0				117.0
disturbed (Anthro Disturb)	129.6		0.5		130.1
western wheat grass/blue grama (AGSM/BOGR)	93.5				93.5
alkali sacaton/galleta (SPAI/HIJA)	24.7				24.7
Totals	10,356.5	64.6	0.5	1.9	10,423.5

Firing ranges (range facilities, targetry, and firing fans) would potentially affect *Bouteloua gracilis/Hilaria jamesii* (blue grama/galleta), *Atriplex canescens/Sporobolus airoides* (fourwing saltbush/alkali sacaton), *Yuca glauca/Aristida longiseta* (small soapweed/red threeawn), *Artemesia bigelovii/Ceratoides lanata* (Bigelow sagebrush/winterfat), *Artemesia bigelovii/Hilaria jamesii* (Bigelow sagebrush/blue grama), *Opuntia imbricate/Bouteloua gracilis* (tree cholla/blue grama), *Juniperus monosperma/Oryzopsis micrantha* (one-seeded juniper/littleseed ricegrass), *Artemesia filifolia/Yucca glauca* (sand sagebrush/small soapweed), *Yuca glauca/Schizachyrium scoparium* (soapweed/little bluestem), *Glossopetalon meionandra/Frankenja jamesii* (greasewood/James frankenia), disturbed land, *Agropyron smithii/Bouteloua gracilis* (western wheat grass/blue grama), and *Sporobolus airoides/Hilaria jamesii* (alkali sacaton/galleta) plant communities.

The **blue grama/galleta** true grassland community, the largest plant community on PCMS, has only scattered shrubs. The **fourwing saltbush/alkali sacaton** shrub community is found most commonly along arroyos and intermittent streams in alluvial fans. The **small soapweed/red threeawn** shrubland community is found across shallow ridge tops and slopes. The **Bigelow sagebrush/winterfat** scattered shrub community is found on shale, limestone, and sandstone rock outcrops. The **Bigelow sagebrush/blue grama** community is a small shrub community found on exposed rims of canyons, limestone outcrops, and infrequently, as large patches on sandstone mesas. The **tree cholla/blue grama** plant community is basically a blue grama/galleta community with an overstory of tree cholla. The **one-seeded juniper/littleseed ricegrass** extensive woodland community is restricted to limestone-derived soils. The **sand sagebrush/small soapweed** shrub community is restricted to the sandiest soils. The **soapweed/little bluestem** community is usually restricted to steep shale, limestone, or basalt slopes. The **greasewood/James frankenia** is a complex shrub community restricted to limestone outcrops and slopes. The **western wheat grass/blue grama** plant community is the second largest grassland community on PCMS. The **alkali sacaton/galleta** community is most commonly found on heavier textured soils of alluvial fans and on colluvial soils at the bases of slopes (Shaw *et al.* 1989a).

Figure 4.7.2 Vegetation Potentially Affected by the Proposed Action



Most effects would be in areas of facility construction (blue grama/galleta, small soapweed/red threeawn, and Bigelow sagebrush/winterfat plant communities). Effects would be minimal, if even detectable, at far extremes of safety fans due to almost all spent munitions landing well short of these extremes. Thus, effects would be minor to the other plant communities. The combination of fires caused by range operation and possibly prescribed burning to minimize fire escape risks would affect native vegetation to some degree since it would be at levels higher than naturally occurring.

The MOUT site would be constructed on blue grama/galleta, small soapweed/red threeawn, and Bigelow sagebrush/winterfat plant communities (described above).

The Soldiers' Support Center would be constructed on already heavily disturbed land within the cantonment area.

The Shoot House would be constructed on the blue grama/galleta plant community (described above). Construction and operation of the Shoot House would potentially affect 2.0 acres of this plant community.

Wetlands

Four windmills are within the firing range study area. Two of them are downrange of proposed live-fire ranges, and they would likely be damaged by operation of the proposed ranges (Figure 2.2.1). Any temporary wetlands created by spillage from their water tanks would not be jurisdictional wetlands.

Special Interest Areas

Only smaller No-Dig areas would be affected by the Proposed Action. These are only at the far eastern end of the Multi-Purpose Machine Gun Range. No other special interest areas would be affected.

No Action

Floral resources would not be affected by the No Action Alternative.

4.7.3 Cumulative Effects

Proposed Action

PCMS land condition, using vegetation as an indicator, improved from the time of Army acquisition through about 1992 and has been relatively stable since then. However, Army occupation of PCMS resulted in relatively permanently changed vegetation where construction and associated development has occurred (*e.g.*, cantonment area, combat landing strip, improved roads).

The Proposed Action continues this process on those areas where buildings and range facilities would be located. This cumulative effect would not be significant. Most effects to vegetation would naturally be repaired if ranges were ever removed. However, soil integrity would be damaged at facility sites, and this would make it difficult to naturally revegetate with native vegetation for a very long period.

No Action

There is no cumulative effect on vegetation from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

⁶ Dan Rees, Environmental Forester, Fort Wainwright; Chris Hays, Fuels Management Specialist, Southern Fire Management Zone, Alaska Fire Service; and Mark Musitano, Fuels Management Specialist, Military Fire Management Zone, Alaska Fire Service.

4.7.4 Site-specific Mitigation

Proposed Action

Impact to vegetation from construction would be limited to areas of construction (e.g., buildings, roads, parking areas, targets). Any incidental damage to other areas would be revegetated with native vegetation. Potential impacts from regular burning of range impact areas (largely due to tracer rounds) would be minimized by the construction of firebreaks and possibly the use of prescribed burning within the fire breaks. Both firebreaks and prescribed burning would minimize risks of fires escaping the immediate area in front of the ranges. Prescribed burning would be accomplished using approved prescribed burn plans.

No Action

Floral resources would not be affected by the No Action alternative.

4.8 Fauna

Additional information regarding fauna on PCMS is in the INRMP (Gene Stout and Associates 2002a). Unless stated otherwise, below information is from that source.

4.8.1 Existing Conditions

Over 80 theses, dissertations, publications, and reports that have been generated from studies of wildlife species at PCMS, as part of baseline studies required by the Environmental Impact Statement for Army use of these lands (U.S. Department of Army 1980). Since these studies, other surveys and research have continued to add to the PCMS species database and understanding of ecological processes on the PCMS, particularly effects of military activities. A list of wildlife species known to occur on PCMS is in INRMP Appendix 3.3.2b (Gene Stout and Associates 2002a).

Important species of management concern are the pronghorn, mule deer, swift fox, black-tailed prairie dog, American Peregrine Falcon, Texas horned lizard, coyote, flathead chub, Mountain Plover, Ferruginous Hawk, Bald Eagle, and Golden Eagle. Most management efforts since the Army acquired PCMS have been directed toward overall conservation of native fish and wildlife species and their habitats. The PCMS contains no designated critical habitat or areas of critical environmental concern.

4.8.2 Environmental Consequences

Proposed Action

Very small amounts of native habitat would be removed by the Proposed Action. These are common habitat types on PCMS and would not significantly affect wildlife species. There is the potential for inadvertent mortality of wildlife from live-fire operations. Experiences on other military installations, including Fort Carson, indicate that this type of mortality would not be significant.

No Action

Faunal resources would not be affected by the No Action Alternative.

4.8.3 Cumulative Effects

Proposed Action

Faunal resources effects from past and current Army actions, when added to the anticipated environmental effects of the Proposed Action, would not result in any significant effect to fauna. Therefore, there would be no cumulative effect from the combined environmental effects of the Proposed Action and those of past, present and reasonable foreseeable future actions.

No Action

There would be no cumulative effects on fauna from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

4.8.4 Site-specific Mitigation

Proposed Action

Effects to wildlife habitat from construction would be limited to areas of construction (e.g., buildings, roads, parking areas, targets). Any incidental damage to other areas would be revegetated with native vegetation. Ranges would be visually inspected for wildlife prior to firing; any observed game mammals (primarily antelope) would be hazed from the area. Firing would be stopped on live-fire ranges if large wildlife species were observed within targeted areas.

No Action

Fauna mitigation would not be required.

4.9 Federal- and/or State-listed Species

Legal status for endangered or threatened species is designated by either the U.S. Fish and Wildlife Service (under the Endangered Species Act) or the Colorado Division of Wildlife (under Colorado Revised Statutes 33-2-105 Article 2). Section 7(a)(2) of the Endangered Species Act requires the Army to ensure that any Army action authorized, funded, or carried out is not likely to “jeopardize” the continued existence of any federal-listed species or result in the destruction or adverse modification of critical habitat (U.S. Army Corps of Engineers 1998).

4.9.1 Existing Conditions

Flora

No federal-listed (Endangered, Threatened, or Candidate) plant species are known to occur on PCMS. Section 3.3.1.3 in the INRMP (Gene Stout and Associates 2002a) lists the 19 state-listed Special Concern floral species found on PCMS.

Fauna

Table 4.9.1 indicates federal-listed fauna that have been documented on PCMS.

The *Bald Eagle* is an uncommon winter visitor or resident on PCMS. Its distribution is probably influenced by the location of prairie dog colonies. This species is often seen in Training Area 7, north of the Hogback. There are no training restrictions associated with the management of this species. The primary conservation activities associated with this species are actions reducing the risk of secondary poisoning.

Table 4.9.1. Federal-listed Species on PCMS⁷
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⁷ Source: <http://wildlife.state.co.us/T&E/list.asp>

Common Name	Scientific Name	Status	Resident Status	Location
Bald Eagle ¹	<i>Haliaeetus leucocephalus</i>	Threatened	Winter	Often associated with prairie dogs, infrequent visitor
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	Warranted but precluded from listing due to higher priorities	Resident	Most common in southwestern corner of PCMS

Definitions:

Threatened – defined as a species, subspecies, or variety likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

Proposed – taxa formally proposed for listing as Endangered or Threatened (a proposal has been published in the Federal Register, but not a final rule).

1) The USFWS has proposed delisting the Bald Eagle. There was no projected date for delisting at the time of this EA.

Black-tailed prairie dog colonies have decreased in size in recent years at PCMS, but they may be recovering. Most known colonies are in Training Area 7, north of the Hogback. A state-listed species, the burrowing owl, is an uncommon summer resident on the PCMS and is closely associated with the black-tailed prairie dog. This species would not be affected by the proposed action, no nesting sites are within the project area.

INRMP Appendix 3.3.2b (Gene Stout and Associates 2002a) lists the 13 state-listed Special Concern faunal species found on PCMS.

4.9.2 Environmental Consequences

Proposed Action

There would not be any significant effects on known federal- or state-listed plant or animal species or their habitats.

No Action

Federal- or state-listed species would not be affected by the No Action Alternative.

4.9.3 Cumulative Effects

Proposed Action

Environmental effects from past and current Army actions, when added to the anticipated environmental effects of the Proposed Action, would not result in any significant effect to federal- or state-listed flora or fauna. Therefore, there would be no cumulative effect from the combined environmental effects of the Proposed Action and those of past, present and reasonable foreseeable future actions.

No Action

There would be no cumulative effects on federal- or state-listed flora from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

4.9.4 Site-specific Mitigation

Proposed Action

Federal- or state-listed species mitigation would not be required.

No Action

Federal- or state-listed species mitigation would not be required.

4.10 Cultural Resources**4.10.1 Existing Conditions**

To date, a total of 3,060 archeological sites (and an additional 1,274 isolated finds) have been identified on the PCMS. Of these, 334 have been determined eligible for inclusion in the National Register of Historic Places (National Register). Eligible prehistoric sites number 133; eligible historic sites number 65. A total of 136 eligible sites are multicomponent, *i.e.* having both prehistoric and historic components (Cowen personal communication). Six National Register-eligible historic homestead districts have been identified on the PCMS (Gene Stout and Associates 2002b).

Section 106 of the National Historic Preservation Act of 1966, as amended, and the 7th ID and Fort Carson Integrated Cultural Resources Management Plan, 2002-2006 require that the 7th ID and Fort Carson:

- perform a cultural resource survey for unsurveyed areas that may be affected by this project, and
- consult with the Colorado State Historic Preservation Office, the Advisory Council on Historic Preservation, Native American tribes, and other consultation partners, as appropriate, prior to authorizing activities that may affect National Register-eligible resources.

Mitigation or alteration of proposed activities may result from consultation.

The Native American Graves Protection and Repatriation Act of 1990 requires agencies to inventory their collections, publish information, and then repatriate to the appropriate “culturally affiliated” Native American tribe all human remains and associated cultural items. The act also requires consultation with such tribe(s) prior to planned excavation and in the case of accidental discovery to stop work for at least 30 days while consultation occurs. Fort Carson consults with 13 federally-recognized affiliated tribes (Gene Stout and Associates 2002b).

4.10.2 Environmental Consequences**Proposed Action**

In spring and summer of 2003 archaeological survey crews, comprised of the Directorate of Environmental Compliance and Management archeologists and New Mexico State University field personnel, conducted a pedestrian survey of the area shown within the perimeter box in Fig. 2.2.1 (study area). This includes an additional 150 meters surveyed as a buffer zone beyond the proposed safety fans. Surveys found six archeological sites considered eligible for inclusion in the National Register.

- *Site 5LA02311* is a large historic site consisting of a dugout structure, two surface features, and several associated artifact scatters. Initial analysis dates the site to *circa* 1910-1930. The site has potential to yield information important to early western settlement in southeastern Colorado.

- *Site 5LA05582* is a substantial multi-component site. The historic component includes foundation remains for seven structures, a well, and a possible cellar. Initial analysis dates the historic component to *circa* 1910-1930. The prehistoric component consists of a small lithic and groundstone scatter. All features exhibit sub-surface deposits, but the site has been impacted by mechanized vehicle traffic.
- *Site 5LA05682* is a small prehistoric site likely used as a temporary campsite where limited food processing took place. One feature, a dark, gray colored stain with scattered pieces of charcoal, has been identified. Associated artifacts include lithic flakes, groundstone, and one projectile point. The site has potential to yield important temporal information.
- *Site 5LA05688* is a large historic site possibly related to either oil exploration or well drilling activities from the late 1920s to early 1930s. One drill head is on the site. The site consists of two or three domiciles, a utility building, an outhouse, a cistern, a tin-covered partial dugout, corrals, an earthen dam, and two trash dumps. A few prehistoric artifacts, including six manos and one mano fragment, have also been recovered from the site.
- *Site 5LA10280* consists of a small homestead related to agriculture. The site, dated to *circa* 1890-1915, includes two foundations, one well, a dugout depression, and numerous diagnostic artifacts. The site has potential to yield important information regarding the history of homesteading in the west during the late-Nineteenth and early-Twentieth centuries.
- *Site 5LA08104* is a large prehistoric site with structures, thermal features, and extensive lithic scatter, and several areas of dense artifact concentration. Associated artifacts include ceramics, groundstone, and numerous flakes, projectile points and other stone tools. The thermal features indicate the potential for recovering intact, buried cultural materials. The ceramics may contribute to chronological issues, while the structures may yield information important to a greater understanding of prehistoric settlement systems.

Construction and operation of the ranges would potentially impact the integrity of the National Register-eligible sites. Failure to implement data recovery could lead to an irrevocable loss of valuable information on the history and prehistory of the region. Therefore, the Proposed Action would potentially have a negative impact on these archeological sites; mitigation measures are discussed below.

No Action

Cultural resources would not be affected by the No Action Alternative.

4.10.3 Cumulative Effects

Proposed Action

Environmental effects from past and current Army actions, when added to the anticipated environmental effects of the Proposed Action, would not result in any significant effect to significant cultural resources. Therefore, there would be no cumulative effect from the combined environmental effects of the Proposed Action and those of past, present and reasonable foreseeable future actions.

No Action

There is no cumulative effect on cultural resources from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

4.10.4 Site-specific Mitigation

Proposed Action

As part of the Proposed Action, the Directorate of Environmental Compliance and Management would implement a data recovery plan for the six National Register-eligible archeological sites located within the proposed safety fans. The plan has been submitted as part of a consultation letter to the Colorado State Historic Preservation Office. The consultation letter, along with a concurrence from the Colorado State Historic Preservation Office, would be provided as Appendix B upon completion.

No Action

Cultural resources mitigation would not be required.

4.11 Socio-economic Conditions

4.11.1 Existing Conditions

The local economy effect of troops training at PCMS includes short-term area economic impacts (facility construction) and longer-term impacts, such as salaries for PCMS personnel and funds spent on equipment and facility maintenance; lodging, food, and entertainment for non-field training troops; local PCMS supplies, etc.

4.11.2 Environmental Consequences

Proposed Action

The Proposed Action would initially (2003-04) cost about \$3.1 million for construction of proposed range facilities and the Soldier Support Center. In 2006 the Modified Record Fire Range would be upgraded, which would cost \$2.5 million. In 2008 and 2009, \$30.25 million would be spent on the MOUT site and Shoot House. Construction, particularly contract construction for the MOUT site, Shoot House, Soldier Support Center, and Modified Record Fire Range upgrade, would temporarily increase local employment levels.

Operation of the facilities would likely eventually affect PCMS employment since the Proposed Action would make PCMS a more desirable option for training units, which would eventually affect military or civilian employment at PCMS. The extent of this effect is uncertain.

No Action

The No Action Alternative would not significantly affect area economics, population demographics, public facilities, utilities, transportation systems, or services.

4.11.3 Cumulative Effects

Proposed Action

As PCMS continues to develop its capabilities to provide full mobilization and other training opportunities, the installation's role in the area economy will become more significant on a long-term basis. The Proposed Action would be part of this cumulative effect.

No Action

There would be no cumulative effect from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions.

4.11.4 Site-specific Mitigation**Proposed Action**

Socio-economic mitigation would not be required.

No Action

Socio-economic mitigation would not be required.

4.12 Environmental Justice

Executive Order No. 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 Federal Regulation No. 32), issued in February 1994, provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations”.

4.12.1 Existing Conditions

Thirteen federally-recognized Indian Tribes are culturally affiliated with the PCMS region. These are the Apache Tribe of Oklahoma, Cheyenne and Arapaho Tribes of Oklahoma, Comanche Nation of Oklahoma, Jicarilla Apache Tribe, Kiowa Tribe of Oklahoma, Northern Arapaho Tribe, Northern Cheyenne Tribe, Oglala Sioux Tribe of the Pine Ridge Reservation, Pawnee Nation of Oklahoma, Shoshone Tribe (Eastern Band), Southern Ute Tribe, Ute Mountain Ute Tribe, and Wichita and Affiliated Tribes of Oklahoma.

No other minority groups or low-income populations live near or are cultural affiliated with the study area.

4.12.2 Environmental Consequences**Proposed Action**

The Proposed Action would be confined to the study area. No impacts to culturally affiliated populations would occur from implementation of the proposed action.

No Action

The No Action Alternative would not significantly affect environmental justice issues.

4.12.3 Cumulative Effects

Proposed Action

There would be no cumulative effect from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions on environmental justice issues.

No Action

There would be no cumulative effect from the combined environmental effects of the No Action Alternative and those of past, present and reasonable foreseeable future actions on environmental justice issues.

4.12.4 Site-specific Mitigation

Proposed Action

As a result of consultation with 13 federally-recognized Indian Tribes per the Native American Graves Protection and Repatriation Act of 1990, mitigation for the Native American reburial site may be required.

No Action

Environmental justice mitigation would not be required.

4.13 General Mitigation

Site-specific mitigation that is specifically designed to offset effects of the proposed construction/operation of firing ranges and other facilities has been identified in previous discussions. However, most mitigation for the proposed construction/operation of firing ranges and other facilities is accomplished in the form of general environmental management conducted by the 7th ID and Fort Carson as a requirement of using public lands for military activities. Most of these mitigation activities are based on national priorities, some of which are within legal instrumentalities (laws, executive orders, etc.) while others are under the category of stewardship. Appendix C is a partial list of the laws that may apply to environmental management on PCMS. Compliance with some of these laws result in mitigation for the proposed construction/operation of firing ranges and other facilities, even though such compliance activities may not have been specifically designed for mitigation of the proposed construction/operation of firing ranges and other facilities.

Specific examples of such general mitigation actions by Fort Carson on PCMS that affect the proposed construction/operation of firing ranges and other facilities include the following:

- implementation of requirements within the acquisition Environmental Impact Statement (U.S. Department of the Army 1980);
- implementation of the INRMP (Gene Stout and Associates 2002a);
- implementation of the Integrated Cultural Resources Management Plan (Gene Stout and Associates 2002b);
- compliance with the Sikes Act Improvement Act;
- implementation of local regulations (e.g., 7th ID & Fort Carson Regulation 200-1, *Environmental Protection and Enhancement*; Fort Carson Regulation 200-5, *Maneuver Damage Control Program*; 7th ID & Fort Carson Regulation 200-6, *Wildlife Management*; Fort Carson Regulation 350-4, *Training, Pinon Canyon Maneuver Site*; 7th ID & Fort Carson Regulation 350-9, *Integrated Training Area Management (ITAM)*; Fort Carson Regulation 385-

63, *Firing Ammunition for Training, Target Practice, Administration and Control of Ranges and Training Areas*):

- implementation of the Integrated Pest Management Plan (7th ID and Fort Carson. 2001a); and
- implementation of the Noxious Weed Management Plan (7th ID and Fort Carson. 2001b).

5. SUMMARY OF EFFECTS AND CONCLUSIONS

5.1 Unavoidable Adverse Effects Should the Proposed Action Be Implemented

Some adverse effects due to construction cannot be avoided if the Proposed Action is implemented. Disturbance of soils and vegetation would occur, and these effects would be cumulative and long-term. There would be no effects to wetlands or federal-listed species. Short-term noise and air quality degradation would occur during construction, but neither would be significant nor long-term. Noise effects of range operation would not be significant. There is a minimal potential for the generation or discovery of hazardous waste or materials; such waste or materials would be disposed of or remediated according to compliance requirements.

Table 5.1 summarizes potential effects for each alternative. Environmental effects would not be significant within the larger geographic and temporal context in which they would take place. Resource areas are in the order they are discussed in this document.

Table 5.1. Summary of Potential Environmental Consequences

Resource Area	Environmental Consequence*	
	No Action Alternative	Proposed Action
Geology	No effect	No effect
Protection of Children	No effect	No effect
Land and Airspace Use (including outdoor recreation)	No effect	Loss of maneuver land permanently on very small areas; minor loss of maneuver and/or recreation opportunities during range operation; airspace restricted during range firing
Soils	No effect	Negative on construction sites
Air Quality	No effect	Slightly negative during construction, undetectable effects during operation
Noise Environment	No effect	Slightly negative during construction; no significant effect during operations
Water Resources	No effect	No effect
Hazardous Waste/Materials	No effect	No effect
Floral Resources (including wetlands)	No effect	Negative at construction sites; slightly negative downrange of firing ranges; no effect on wetlands
Faunal Resources	No effect	Very slightly negative
Listed or Sensitive Species	No effect	No effect
Cultural Resources	No effect	No effect
Socioeconomic Environment	No effect	Beneficial
Environmental Justice	No effect	No effect

* No effect: Actions have no known demonstrated or perceptible effects

Beneficial: Actions have apparent beneficial effects

Negative: Actions have apparent negative effects

⁸ Information is not available to identify employment per federal agency. Federal agencies consist of Defense; Transportation; Interior; Health, Education and Welfare; Postal Service; Commerce; Agriculture; and Treasury.

⁹ USARAK Command Information Card, FY 02, Management Service Division, DCSRM, Fort Richardson, AK.

5.2 Irreversible and Irretrievable Commitments of Resources

The Proposed Action would involve no irreversible or irretrievable commitment of resources other than the consumption of various expendable materials, supplies, and equipment associated with construction.

5.3 Conclusions

The Proposed Action to construct/operate small arms firing ranges and other range facilities at PCMS was analyzed by comparing potential environmental consequences against existing conditions. Findings indicate that implementation of the Proposed Action would result in either no significant adverse environmental consequences or temporary and relatively minor negative effects on each environmental area, except for socio-economic effects, which would be temporarily beneficial. The affected environment would not be significantly or adversely effected by proceeding with the Proposed Action. No significant cumulative effects would be expected.

Based on this environmental assessment, implementation of the Proposed Action (*i.e.*, construction/operation of small arms firing ranges and other range facilities) would have no significant negative environmental or socioeconomic effects. The Proposed Action does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, preparation of an environmental impact statement is not required, and preparation of a Finding of No Significant Impact is appropriate.

6. PERSONS CONTACTED – 7th ID AND FORT CARSON AND OTHER ARMY

Dan Benford - Deputy Range Manager, Range Division, G3/ Directorate of Plans, Training and Mobilization
Pamela Cowen – Cultural Resources Manager, Conservation branch, Natural and Cultural Resources Division, Directorate of Environmental Compliance and Management
Greg Ellis - Range Safety Officer, Range Division, G3/Directorate of Plans, Training and Mobilization
Russ Hamilton - Environmental Law Specialist, Staff Judge Advocate
Nelson Kelm - Environmentalist (noise), Prevention Branch, Environmental Compliance, Restoration and Prevention Division, Directorate of Environmental Compliance and Management
Jeffrey Linn - Chief, Environmental Services Branch, Directorate of Environmental Compliance and Management
Linda Moeder - Geographic Information Specialist, Business and Administrative Services Branch, Directorate of Environmental Compliance and Management
Caron Rifici - Botanist, Noxious Weed Coordinator, Resources Sustainment Branch, Natural and Cultural Resources Division, Directorate of Environmental Compliance and Management
Mary Barber - Deputy Director, Directorate of Environmental Compliance and Management
Robin Romero - National Environmental Policy Act Coordinator, Environmental Services Branch, Directorate of Environmental Compliance and Management
George (Rusty) Savoy - Integrated Training Area Management Coordinator, Range Division, G3/ Directorate of Plans, Training and Mobilization
Robert C. Stack - Installation Range Manager, Range Division, G3/ Directorate of Plans, Training and Mobilization
Edward Tebo - Chief, Prevention Branch, Environmental Compliance, Restoration and Prevention Division, Directorate of Environmental Compliance and Management
Thomas L. Warren - Director, Directorate of Environmental Compliance and Management
Edward Whitcraft - Deputy Director, Directorate of Public Works

7. EXTERNAL AGENCY COORDINATION

U.S. Fish and Wildlife Service

Bruce Rosenlund
755 Parfet, Suite 496
Lakewood, CO 80215
(303) 275-2393/2392

Colorado State Historic Office

Colorado Historical Society
1300 Broadway
Denver, Colorado 80203-2137

Colorado Division of Wildlife

Jeremy Gallegos

8. REFERENCES

- 7th Infantry Division and Fort Carson. 2001a. *Integrated Pest Management Plan, Fort Carson Mountain Post*. Directorate of Environmental Compliance and Management, Fort Carson, CO.
- _____. 2001b. *Noxious Weed Management Plan, Fort Carson and the Pinon Canyon Maneuver Site*. Directorate of Environmental Compliance and Management, Fort Carson, CO. 31 pp. + appendices.
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Von Guerard, P., R.S. Parker, and R.G. Dash. 1993. *Assessment of Effects of Military Maneuvers on the Streamflow, Water Quality, and Sediment Yields at the U.S. Army Pinon Canyon Maneuver Site, Las Animas County, Colorado*. Water-Resources Investigations Report 91-4095, prepared in cooperation with U.S. Department of the Army, Fort Carson Military Reservation, CO. U.S. Geological Survey, Pueblo, CO. 84 pp.

9. ENVIRONMENTAL ASSESSMENT PREPARERS

This environmental assessment was prepared by Gene Stout and Associates, with support from the Directorate of Environmental Compliance and Management, G3/Directorate of Plans, Training, and Mobilization, and Directorate of Public Works (see Chapter 6). Below are backgrounds of personnel within Gene Stout and Associates who either prepared or edited this assessment.

Jeffrey Blythe

Ph.D. Social Anthropology, University of Cambridge, England
M.Phil. Social Anthropology, University of Cambridge, England
B.A. Anthropology, Bard College, Annandale-on-Hudson, NY
Years of Experience: 10

Gene Stout

M.S. Zoology (Wildlife), Arizona State University
B.S. Zoology, Penn State University
Years of Experience: 31

Jeffrey Trousil

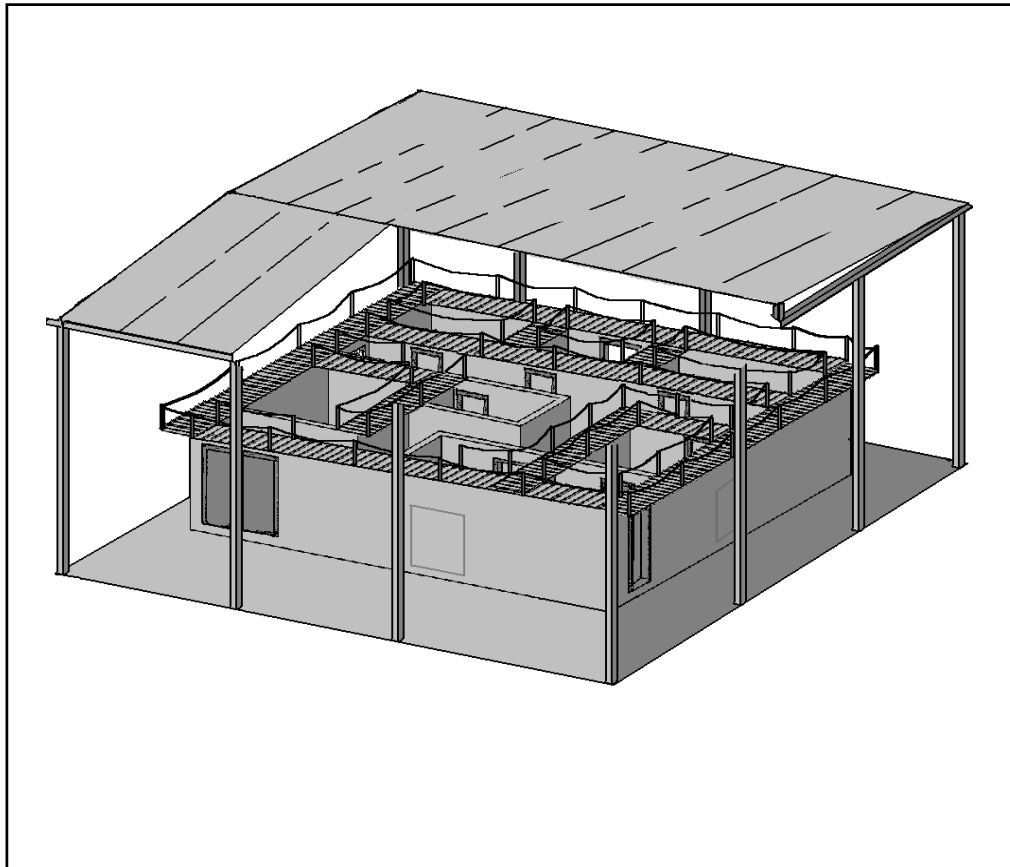
B.S. Wildlife, University of Wisconsin, Stevens Point
Years of Experience: 16

10. ACRONYMS

CFR	Code of Federal Regulations
db	decibel
F	Fahrenheit
ID	Infantry Division
in	inches
INRMP	Integrated Natural Resources Management Plan
MCA	Military Construction Army
mm	millimeter
MOUT	Military Operations in Urban Terrain
NEPA	National Environmental Policy Act
PCMS	Piñon Canyon Maneuver Site
PM ₁₀	particulate matter 10 microns or less in diameter
U.S.	United States
USC	United States Code

APPENDIX A. Standard Descriptions of Proposed Facilities¹⁰

Shoot House



Use: Soldiers conduct live fire training under simulated close combat conditions. Soldiers would be trained and evaluated on their ability to move tactically, engage targets, and practice target discrimination in an urban environment.

Characteristics: Must have a minimum of two internal rooms. Catwalk with barn roof. Catwalk for pre-training observation only. House has four entrances. Shoot House design must accommodate 5.56mm ball and 5.56mm short-range training ammunition. Floor and interior walls must prevent ricochet effects. House can possess automated targetry that can be modified to change the scenario. Video capture capability for after-action review. Can be used with laser force-on-force blank fire.

Targetry - There are 13 precision targets for this station. These targets are re-configurable to represent combatants or non-combatants.

Ammunition requirements - 5.56 mm blank, SESAMS, SRTA, 5.56 mm ball, M84 stun grenade, practice grenades, smoke grenades, detonation cord, non-electric firing blasting caps.

Additional information - Barn roof does not reduce 360-degree surface danger zone but is there to reduce light and enhance realism.

Multi-Purpose Machine Gun Range

Pistol Range

Grenade Launcher Range

TC 25-8

17884 GRENADE LAUNCHER RANGE

This facility is used to train and test individual soldiers on the skills necessary to engage and defeat stationary target emplacements with the 40mm Grenade Launcher.

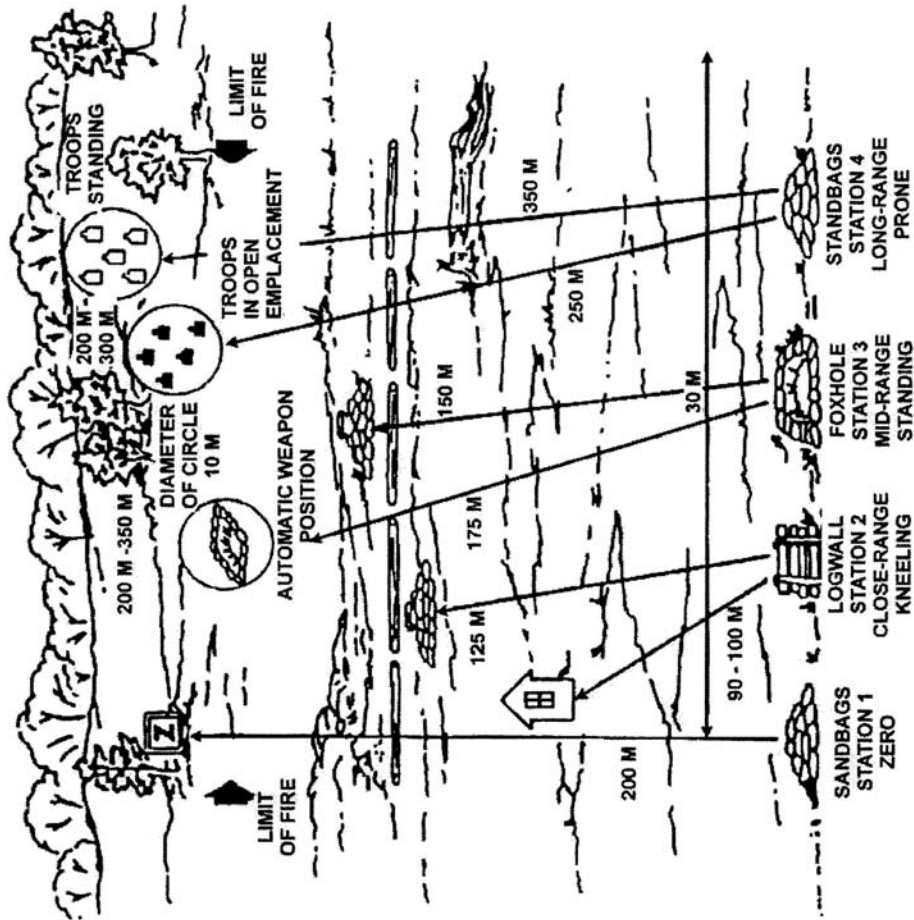
Primary features include:
4 Individual Firing Stations

This range allows the use of the following ammunition:
40mm TP
40mm HEDP (if dedicated impact area is available)

No automation is required for this facility. All targets/facades are fired at required distances.

Associated Range Operations and Control facilities:
Standard Small Arms ROCA Facilities

Requirement Document: FM 23-31, STP 21-1 SMCT
Additional Information: Zero targets are at least 2 meters high and 2 meters wide. Zero target is clearly marked with a large contrasting "Z".
Targets are made of long-lasting, durable material that can withstand constant use with little maintenance.
Salvaged oil drums filled with sand make excellent semi-permanent target material for this range.



January 31, 2002

D-22

FCC: 17884

APPENDIX B. Cultural Resources Findings

SHPO letters will be added when concurrence is completed.

APPENDIX C. Legal Instruments that May Provide General Mitigation for the Proposed Construction/Operation of Firing Ranges and Other Facilities

Below are significant federal and state laws, regulations, and other regulatory instruments that may provide mitigation for the proposed construction/operation of firing ranges and other facilities on PCMS.

Federal Laws

American Indian Religious Freedom Act
Archaeological and Historic Preservation Act of 1974
Archaeological Resources Protection Act of 1979
Bald Eagle Protection Act
Clean Air Act
Clean Water Act of 1978
Conservation and Rehabilitation Program on Military and Public Lands
Conservation Programs on Military Reservations
Endangered Species Act of 1973
Erosion Protection Act
Federal Facilities Compliance Act of 1992
Federal Insecticide, Fungicide and Rodenticide Act
Federal Water Pollution Control Act Amendments of 1972
Fish and Wildlife Conservation Act of 1980
Fish and Wildlife Coordination Act
Fish and Wildlife Conservation and Natural Resource Management Programs on Military Reservations
Hunting, Fishing and Trapping on Military Lands
Migratory Bird Conservation Act
Migratory Bird Treaty Act
Military Construction Act of 1982
National Defense Authorization Act of 1994
Native American Graves Protection and Repatriation Act
National Environmental Policy Act of 1969
National Historic Preservation Act of 1966
Native American Graves Protection and Repatriation Act
Noxious Plant Control Act
Outdoor Recreation on Federal Lands
Plant Protection Act of 2000
Sikes Act Improvement Amendments of 1997

Executive Orders and Presidential Memoranda

Executive Order 11593, Protection and Enhancement of the Cultural Environment
Executive Order 11988, Floodplain Management
Executive Order 11989, Off-Road Vehicles on Public Lands
Executive Order 11991, Protection and Enhancement of Environmental Quality: Amends Executive Order 11514
Executive Order 12608, Protection of Wetlands: Amends Executive Order 11990
Executive Order 12898, Environmental Justice
Executive Order 13007, Indian Sacred Sites
Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks

Executive Order 13112, Invasive Species
Executive Order 13175, Consultation and Coordination with Indian Tribal Governments
Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
Presidential Memorandum, Environmentally and Economically Beneficial Practices on Federal
Landscaped Grounds (April 26, 1994)
Presidential Memorandum, Government-to-Government Relations with Native American Tribal
Governments

Department of Defense (DoD) Directives/Instructions

DoD Directive 4150.7, DoD Pest Management Program
DoD Directive 4700.4, Natural Resources Management Program
DoD Directive 4710.1, Archaeological and Historic Resources Management
DoD Instruction 4715.3, Environmental Conservation Program
DoD Instruction 4715.9, Environmental Planning and Analysis
DoD Instruction 5000.13, Natural Resources
DoD Directive 6050.1, Environmental Effects in the United States of DOD Actions
DoD Directive 6050.2, Use of Off-Road Vehicles on DOD Lands
Department of Defense, American Indian and Alaska Native Policy

Army Regulations (AR)

AR 200-1, Environmental Protection and Enhancement (Department of the Army 1997c)
AR 200-2, Environmental Analysis of Army Actions, 32 CFR Part 651, (Department of the Army
2002)
AR 200-3, Natural Resources, Land, Forest, and Wildlife Management (Department of the Army
1995a)
AR 200-4, Cultural Resources Management (Department of the Army 1997b)
AR 200-5, Pest Management (Department of the Army 1999a)
AR 350-4, Integrated Training Area Management (Department of the Army 1998a)

Fort Carson (FC) Regulations

7th ID & FC Reg 200-1, Environmental Protection and Enhancement
FC Reg 200-5, Maneuver Damage Control Program
7th ID & FC Reg 200-6, Wildlife Management
FC Reg 350-4, Training, Pinon Canyon Maneuver Site
7th ID & FC Reg 350-9, Integrated Training Area Management (ITAM)
FC Reg 385-63, Firing Ammunition for Training, Target Practice, Administration and Control of
Ranges and Training Areas

Colorado (CO) Regulations

Regulation No. 1 - Emission Control Regulations for Particulates, Smokes, and Sulfur Oxides for the
State of Colorado
Regulation No. 3 - Regulations Requiring an Air Contaminant Emission Notice, Emission Permits and
Fees
Regulation No. 8 - The Control of Hazardous Air Pollutants
Ambient Air Standards - Metropolitan Denver Air Quality Region, State Air Pollution Control Areas
and the State of Colorado
5 CCR 1002 - Water Quality Control Commission
5 CCR 1002-8 - Water Quality Standards and Stream Classification
5 CCR 1003 - Water Quality Control Commission

APPENDIX D. Comments Received During Scoping and Public Review

Public meetings were held in La Junta (Student Center, Otero Junior College) and Trinidad (Sullivan Student Center) on November 17 and 18, respectively, to obtain public input regarding the Proposed Action. Meetings began with an explanation of the NEPA process and a short presentation of the history of Army use of PCMS. Personnel within the Directorate of Environmental Management and Compliance and G3/Directorate of Plans, Training and Mobilization then responded to public comments and provided further information on the Proposed Action.

The La Junta meeting was attended by 14 non-Fort Carson persons representing landowners, cattlemen associations, the U.S. Forest Service, and the La Junta Tribune. The Trinidad meeting was attended by 21 non-Fort Carson persons representing landowners, the Colorado Division of Wildlife, and the City of Trinidad.

Some comments and concerns expressed by attendees were not related to the Proposed Action (use of Base Closure and Realignment [BRAC] installations for firing, aircraft noise, future Army firing proposals, lack of grazing, desire for permanent fire department at PCMS, highway convoys, future land acquisitions, PCMS-raised predators, etc.). The Army responded to concerns regarding future Army actions that such actions would be handled using the NEPA process, including public involvement.

Concerns expressed that were directly related to the Proposed Action involved the following.

- Would the Proposed Action make PCMS an enemy target?
- Would the Proposed Action decrease neighboring land values?
- What would be the impacts of the Proposed Action on groundwater and air quality?
- What would be the impacts of the Proposed Action on noise?
- Why did the Army change its mind from its commitments in the original PCMS acquisition Environmental Impact Statement?
- Would the Proposed Action increase PCMS employment levels?
- Would the Proposed Action increase fire risks?
- Would ammunition be stored on PCMS?
- Could ranges be moved away from proposed location to minimize off-post impacts?
- Would the Proposed Action affect wildlife and associated recreation?

The Army committed to addressing these concerns in its Environmental Assessment. There were several comments complimenting the Army for its stewardship at PCMS. Detailed notes on both public meetings are stored at the Directorate of Environmental Compliance and Management.

December 16, 2003

U.S. Army Pinon Canyon Attn: Robin Romero

RE: Construction of small arms ranges, a shoot house, MOUT & soldier support facility

Ms. Romero:

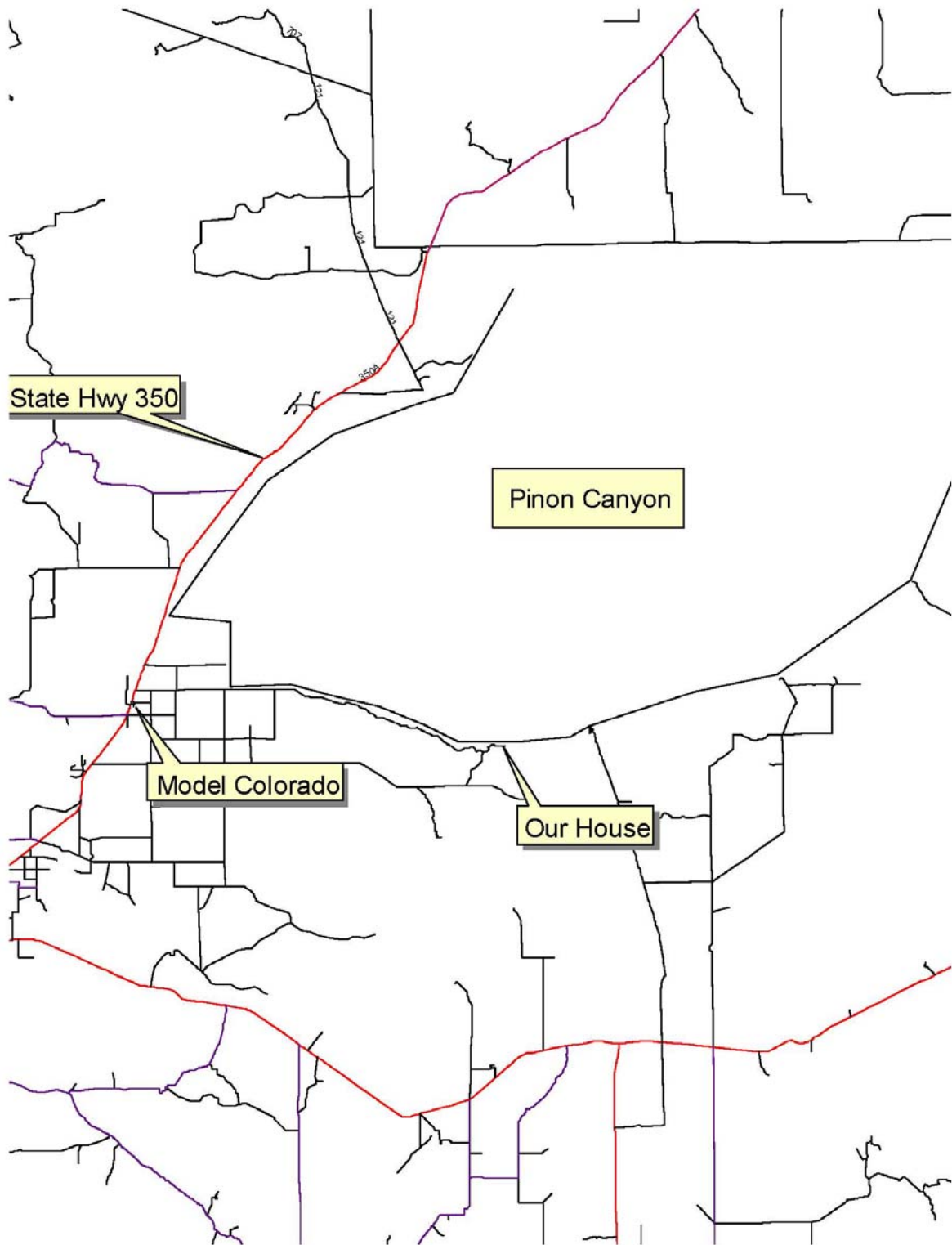
Recently, the above has been brought to my attention. I'm not sure if you are the individual I need to write to. If not please e-mail me as to whom and please indulge me with the following.

My concern isn't as much about the environmental impact as it is to the humans (my family) and critters in the area. As shown on the included map, our house is next to Pinon Canyon. The time of day or night and the location at which these arms are shot may disrupt our way of life including our sleep. If this indeed becomes a nuisance, I'd like an address that I can e-mail a formal complaint to.

I must state that I realize that training is critical and that I'm not opposed to it in general. Therefore I'm sure if a problem does arise, we can reach some type of arrangement that will be satisfactory to both of us.

Thank you,

Phil Dorenkamp





DEPARTMENT OF THE ARMY
HEADQUARTERS, 7th INFANTRY DIVISION AND FORT CARSON
FORT CARSON, COLORADO 80913-5000

REPLY TO
ATTENTION OF

February 5, 2004

Directorate of Environmental
Compliance and Management

Dear Mr. Dorenkamp:

You recently commented on a document prepared by the Fort Carson Directorate of Environmental Compliance and Management (DECAM) entitled "Environmental Assessment for the Construction/Operation of Firing Ranges and Other Training Facilities, Pinon Canyon Maneuver Site, Colorado". We appreciate very much your interest in the project and your input. Our response to your comments and requested information follows.

Your concern for the safety of your family and others is well understood. The four small arms firing ranges were planned for construction in an area where safety and minimization of noise impacts were of the utmost priority. The range fans for each range (farthest distance a bullet can travel) show that your home will not be impacted by the training. Fort Carson ranges are very well supervised under extremely controlled conditions so that arms are not fired randomly. Noise analysis shows that impacts to your location would be very minimal because of distance (approx. 10 km) and geological features (the Hogback). In the event that you would like to comment to Fort Carson about noise, dust or other issues, contact LTC Tom Budzyna at the following office:

Public Affairs Office (PAO)
Building 1550
Fort Carson, CO 80913-5000

Or you may telephone the PAO at (719) 526-1269.

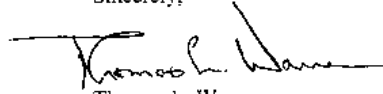
If you have any other questions/comments regarding the National Environmental Policy Act (NEPA) process at Fort Carson/ Pinon Canyon Maneuver Site, you may direct them to me, Robin Romero, at:

Department of the Army
Directorate of Environmental Compliance and Management
ATTN: Robin Romero
1638 Elwell Street, BLDG 6236
Fort Carson, CO 80913-4356

You may also send questions by email to: robin.romero@carson.army.mil, or phone (719) 526-0912.

Once again, thank you for your interest in Fort Carson's activities at the Pinon Canyon Maneuver Site. Fort Carson will continue to keep the public updated on any proposed activities or projects that may potentially affect its neighbors.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas L. Warren".

Thomas L. Warren
Director, Environmental
Compliance and Management

December 31, 2003

Department of the Army
Directorate of Environmental Compliance and Management
ATTN: Robin Romero
1638 Elwell Street, Bldg 6236
Fort Carson, CO 80913-4356

Sir or Madam:

I have read your proposal and, as your neighbor, have a couple of issues:

1. You will be firing directly at my ranch, personnel and livestock. Yes, you are miles away but I can't help but wonder how far a misguided 50 caliber bullet will travel.
2. Secondly to the first issue, but just as important, is my concern about the proposed air space restriction. As a rancher, I do a lot of flying between Trinidad, my ranch and other locations. I would like to have more information, including the dimensions of the air space – horizontally and vertically – the number of days and which days of the year, and who will be the controlling authority.

Please let me know as soon as possible.

Jerry A. Wenger
Manager
JE Canyon Ranch, LLC



DEPARTMENT OF THE ARMY
HEADQUARTERS, 7th INFANTRY DIVISION AND FORT CARSON
FORT CARSON, COLORADO 80913-5000

REPLY TO
ATTENTION OF

February 5, 2004

Directorate of Environmental
Compliance and Management

Dear Mr. Wenger:

You recently commented on a document prepared by the Fort Carson Directorate of Environmental Compliance and Management (DECAM) entitled "Environmental Assessment for the Construction/Operation of Firing Ranges and Other Training Facilities, Pinon Canyon Maneuver Site, Colorado". We appreciate very much your interest in the project and your input. Our response to your comments and requested information follows.

Your concern for the safety of your personnel and livestock is well understood. The four small arms firing ranges were planned for construction in an area where safety and minimization of noise impacts were of the utmost priority. The range safety fans for each range (farthest distance a bullet can travel) show that your ranch will not be impacted by the training. The 50 caliber bullet can only travel 6500 meters maximum. Your ranch is approximately 34 km east of the firing ranges. Fort Carson ranges are very well supervised under extremely controlled conditions so that a misguided bullet would be very unlikely.

The second issue you mentioned was airspace. The area will be designated a Controlled Firing Area (CFA). The CFA will be limited to 12,500 ft. MSL only. The small arms ranges will have "Air Guards" posted on them to halt firing if an aircraft is approaching. The CFA "box" will be 6500m X 6500m in case you would rather avoid the CFA area completely when troops are training on the ranges. Information on days the ranges will be in use can be obtained through a phone call to PCMS headquarters, 719.524.0120 or 524.0124.

In the event that you would like to comment to Fort Carson about safety or other issues, contact LTC Tom Budzyna at the following office:

Public Affairs Office (PAO)
Building 1550
Fort Carson, CO 80913-5000

Or you may telephone the PAO at (719) 526-1269.

CORPORATE OFFICE

Box 813
Powell, WY 82435
(307) 754-8338



27331 C.R. 157 • Branson, CO 81027
(719) 946-5648

January 15, 2004

COLO. BUSINESS OFFICE

Box 87
Springfield, CO 81073
(719) 523-4584

Ms. Robin Romero
Fort Carson NEPA Manager
Department of the Army
Directorate of Environmental Compliance & Management
1638 Elwell St., Bldg 6236
Fort Carson, CO 80913-4356

RE: Public Comments Regarding Construction & Operation
Of Firing Ranges, Pinon Canyon Maneuver Site

Dear Ms. Romero:

As the General Manager for JE Canyon Ranch LLC, I have read your Environmental Assessment for Construction Operation of Firing Ranges and other training facilities Pinon Canyon Maneuver Site, Colorado. JE Canyon Ranch LLC wishes to respond to the draft as follows:

Corrections

Figure 2.1.1b. Lands neighboring Pinon Canyon Maneuver Site

This is a map indicating ownership of lands neighboring Pinon Canyon Maneuver Site. Different ownerships are shown in different colors. You have incorrectly identified land owned by JE Canyon Ranch as lands owned by State of Colorado and leased by U.S. Forest Service. I have enclosed a copy of this map showing where these incorrectly identified lands are located.

JE Canyon Ranch requests that this error be corrected prior to this draft being finalized. Our reason for this request is that it not mislead users of the report into thinking that the area is public lands and therefore, assessable through Pinon Canyon Maneuver Site for recreation uses, etc., which would cause trespass on privately owned lands of JE Canyon Ranch.

4.1.1. Existing Conditions

Recreation use Pages 14 and 15, "A permission letter issued by the DECAM Wildlife Office is required to enter adjacent public lands from PCMS."

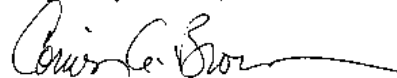
It is not uncommon for JE Canyon Ranch staff to find evidence of trespass onto their private lands from PCMS, especially during the fall hunting seasons. Almost all these trespass violations are from people who have obtained permission from PCMS to access public lands or

Ms. Robin Romero
January 15, 2004
Page 2

to hunt on PCMS itself. During the 2003 hunting season, not only did JE Canyon Ranch staff find evidence of trespass, fence gates between the two properties were left open, allowing JE Canyon Cattle Ranch cattle to stray onto PCMC. JE Canyon Ranch does not want its cattle on PCMS, and it is assumed PCMS has mutual feelings.

Therefore, it would be mutually beneficial if PCMS and JE Canyon Ranch work together to resolve this problem and it should be addressed in the report. JE Canyon Ranch would prefer this policy of allowing the general public access across PCMS for recreational purposes on adjoining public lands in the area of our common borders be stopped in its entirety.

Respectfully submitted,



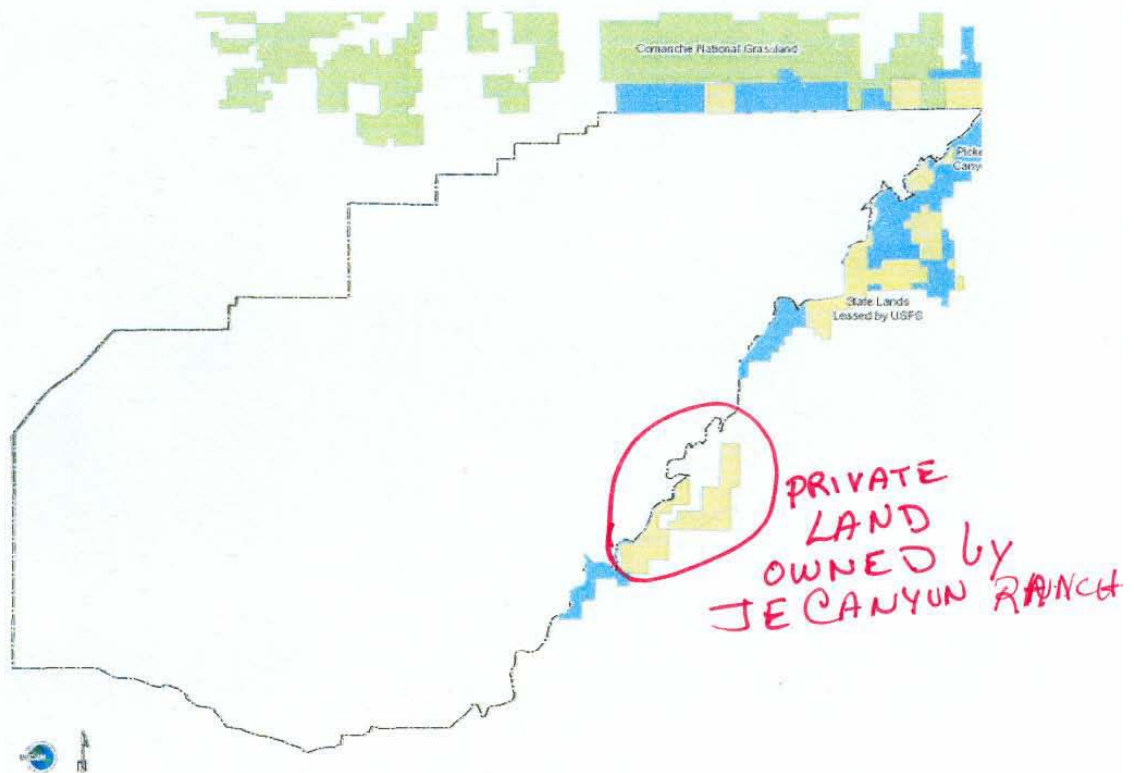
Corwin A. Brown

CAB/lp
Enc.

DRAFT – Do Not Cite

Multi-Purpose Machine Gun Range	
Squad Assault Weapon	2,818,720 rounds
Sniper Rifle	73,800 rounds
Machine guns	300,120 rounds
Combat Pistol Qualification Course	78,440 rounds
Modified Record Fire M-16 Range (rifle)	5,321,600 rounds
Grenade Launcher Range	16,320 rifle rounds and 44,880 40 mm rounds

Figure 2.1.1b Lands Neighboring Piñon Canyon Maneuver Site



Green – U.S. Forest Service Comanche National Grasslands
Blue – U.S. Forest Service Picket Wire Canyonlands
Brown – State lands leased by U.S. Forest Service
No color – Private lands



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HEADQUARTERS, 7th INFANTRY DIVISION AND FORT CARSON
FORT CARSON, COLORADO 80913-5000

February 5, 2004

Directorate of Environmental
Compliance and Management

Dear Mr. Brown:

You recently commented on a document prepared by the Fort Carson Directorate of Environmental Compliance and Management (DECAM) entitled "Environmental Assessment for the Construction/Operation of Firing Ranges and Other Training Facilities, Pinon Canyon Maneuver Site, Colorado". We appreciate very much your interest in the project and your input. Our response to your comments and requested information follows.

The map indicating ownership of lands neighboring the Pinon Canyon Maneuver Site was taken from a US Forest Service map and a Bureau of Land Management map that showed the area in question as being State-owned land. We have located a more recent version of designated land ownership and have made the correction in the final environmental assessment. Thank you for your attention to this aspect and we regret the error.

The issue of access to public lands across PCMS is at times problematic. We will continue to work this issue with appropriate land management agencies, adjacent landowners and those who have permission to access PCMS. We neither condone nor have control over unauthorized private property trespass activities. However and while we are unable to terminate such access to adjacent public lands when consistent with other military training requirements, we will continue to respond as soon as possible to help repair broken and/or cut fences along our common property boundary. Mr. Bob Hill will continue to work these issues directly with you. The phone number to contact Mr. Hill is 719.524.0123.

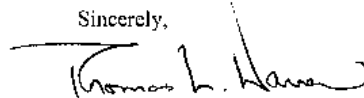
If you have any other questions/comments regarding the National Environmental Policy Act (NEPA) process at Fort Carson/ Pinon Canyon Maneuver Site, you may direct those to Robin Romero, at:

Department of the Army
Directorate of Environmental Compliance and Management
ATTN: Robin Romero
1638 Elwell Street, BLDG 6236
Fort Carson, CO 80913-4356

You may also send questions by email to: robin.romero@carson.army.mil, or phone (719) 526-0912.

Once again, thank you for your interest in Fort Carson's activities at the Pinon Canyon Maneuver Site. Fort Carson will continue to keep the public updated on any proposed activities or projects that may potentially affect its neighbors.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas L. Warren". The signature is fluid and cursive, with a long horizontal stroke at the end.

Thomas L. Warren
Director, Environmental
Compliance and Management